AGRICULTURAL BURNING SMOKE MANAGEMENT PROGRAM SURVEY

WESTERN GOVERNORS ASSOCIATION
CONTRACT NO. 30202-11

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Introduction

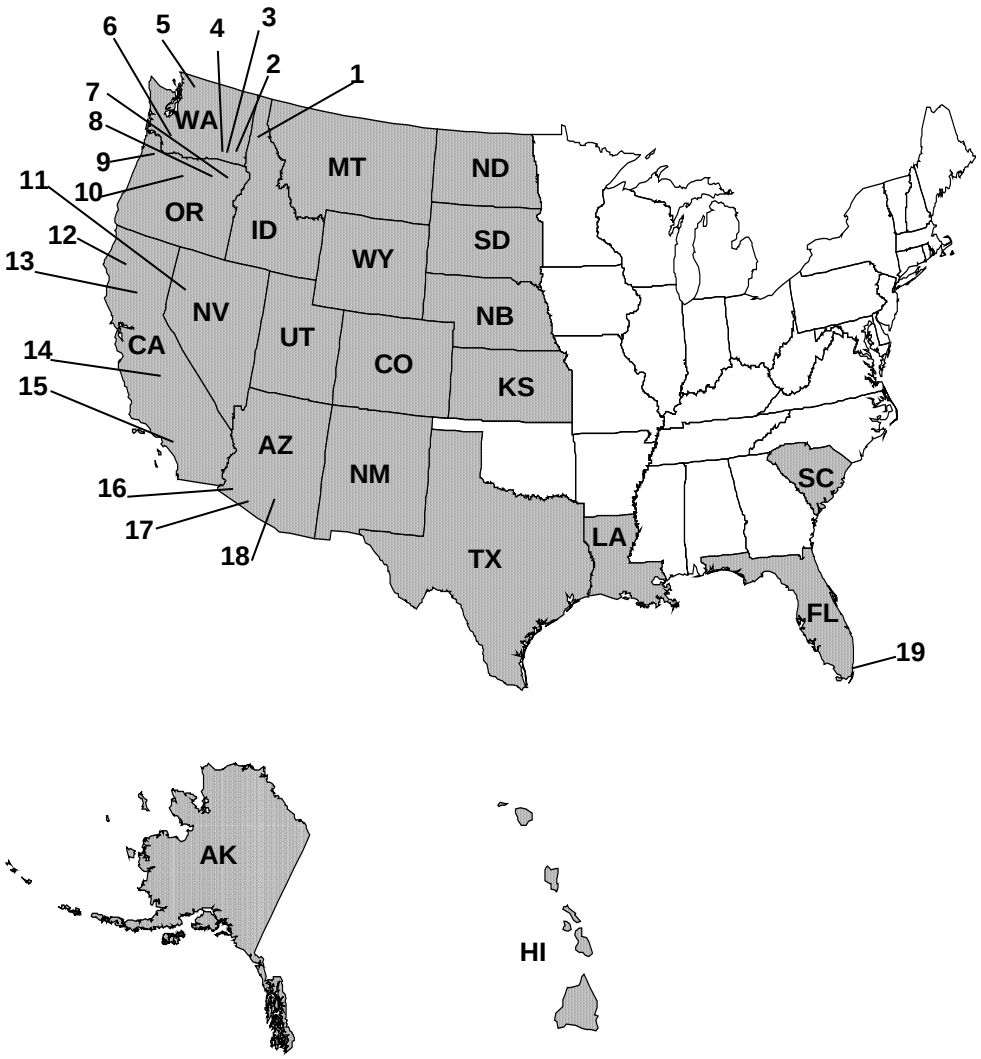
On June 10, 1996, the Grand Canyon Visibility Transport Commission (GCVTC) submitted its report, *Recommendations for Improving Western Vistas*, to the U. S. Environmental Protection Agency (EPA). Recognizing that smoke from prescribed burn activities can have a significant impact on visibility and regional haze, public health and public nuisance, the GCVTC recommended that eight specific fire-related measures be developed to address the potential effects of fire on air quality. The development and implementation of criteria and requirements for the use of enhanced smoke management programs is one of the recommended measures.

Fire is an integral part of agricultural management. Modern technology-based agriculture still utilizes burning. The reasons for burning vary, but the most common reasons are to reduce pre-and post-harvest vegetation that interferes with harvest, tillage or subsequent seedbed preparation. Burning is also used for pest and weed control and lowers the need for supplemental herbicide and pesticide treatments. Smoke management programs (SMP) provide a basic framework of procedures and requirements for managing smoke from agricultural fires. The purposes of the SMPs are to mitigate the nuisance and public safety hazards (e.g., on roadways and at airports) posed by smoke intrusions into populated areas; to prevent deterioration of air quality and violations of the National Ambient Air Quality Standards; and to address visibility impacts in mandatory Class I Federal areas. Many States and local areas have prescribed fire regulations and SMPs in place.

The Fire Emissions Joint Forum (FEJF) is a group formed under the auspices of the Western Regional Air Partnership (WRAP), which was established to implement the recommendations of the GCVTC. The FEJF s mission is to develop programs and tools relating to prescribed fire and air quality for the WRAP and related WRAP forums. One of these tools is recommendations for elements of basic SMPs for agricultural lands. To develop guidance for the basic SMP, the FEJF needed additional information from State and local agencies regarding their existing SMPs and regulations.

To gather additional information, the FEJF prepared a list of 22 questions under seven broad subject headings: program operation, emissions, smoke management, enforcement, public education, program evaluation and further information. Twenty-one States and 19 local agencies were contacted and interviewed, and asked to provide documents and any other information regarding their SMPs. After carefully reviewing all the gathered information, draft surveys were prepared that answered the 30 questions. Each State and local area was sent the draft survey and cover letter requesting their review and comment. The comments were then incorporated into the surveys and compiled into this report. Figure 1 illustrates the 21 States and 19 local areas that are summarized.

This report illustrates the various ways in which States and local areas address smoke management through regulations and programs. Each surveyed program is unique and reflects climate, geography, crop type, burn objectives, and other local constraints such as air quality and funding. In addition, many of the surveyed programs are evolving to fulfill certain requirements such as the Regional Haze Rule and Title 17 in California. This report will assist the FEJF in establishing of a SMP clearinghouse and elements of basic SMPs for agricultural burning as envisioned by the GCVTC.



Key to Local Areas

1	Kootenai and Benewah Counties, ID	11	Lovelock Valley, NV
2	Columbia County, WA	12	Lake County AQMD, CA
3	Walla Walla County, WA	13	Sacramento Metro AQMD, CA
4	Benton County, WA	14	San Joaquin Valley AQMD, CA
5	Northwest Air Pollution Authority, WA	15	South Coast AQMD, CA
6	Southwest Clean Air Agency, WA	16	Yuma County, AZ
7	Union County, OR	17	Pima County, AZ
8	Umatilla County, OR	18	Pinal County, AZ
9	Willamette Valley, OR	19	Miami/Dade County, FL
10	Jefferson County, OR		

Figure 1. The 21 States and 19 Local Areas Summarized.

Source of summary information:

[1] Alaska Department of Environmental Conservation, Open Burning Policy & Guidelines at http://fire.r9.fws.gov/ifcc/smoke/State%20Regs/alaska.htm and **http://www.state.ak.us/dec/dawq**.

[2] WESTAR, Western States Agricultural Burning Survey, 1999.

[3] Comments from Ann Lawton, Alaska Department of Environmental Conservation, received on October 31, 2000 and December 7, 2000.

Special Note:

This survey was reviewed by the Alaska Department of Environmental Conservation. For more information, contact Ann Lawton, AK DEC, 555 Cordova Street, Anchorage, AK, 99501.

Smoke Management Program Component	State
	Alaska
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	Agricultural burning is regulated by the state s Open Burning Policy & Guidelines. [1] The Department of Environmental Conservation (DEC) is responsible for regulations and permits to address environmental protection. It is the policy of the DEC to eliminate, minimize, or control open burning. [1] The Department of Natural Resources (DNR) is responsible for regulations and permits to address fire safety concerns. [1]
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	Alaska does not have a SMP for agricultural burning. The state recognizes the need to develop a SMP to control open burning and, due to interagency concerns over such a document, the Air Quality Committee of the Alaska Wildland Fire Coordinating Group will be developing the document. [1] The DEC is responsible for regulations and permits to address environmental protection. It is the policy of the DEC to eliminate, minimize, or control open burning. [1]
3. Please describe the SMP. What are the requirements and general practices (voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	The state s Open Burning Policy & Guidelines has two basic concerns with open burning: 1) that it does not spread and become a wildfire, and 2) that it does not create a health hazard or a public nuisance. [1] For land clearing, notification of at least one day in advance of burning attempts should be provided to the DEC. If burning is not conducted for that day, renotification is required on the day burning commences. [1]

Smoke Management Program Component	State
	Alaska
	Continued on next page
3. Continued	Controlled open burning of material from land clearing operations for agricultural or development and forest or habitat management requires written DEC approval if the area to be burned, or the material collected to be burned, exceeds 40 acres yearly. [1] A complete burn plan is required for land clearing open burns planned for each year. [1] Burn plans must address the following control concerns which may be modified to fit the specific open burning situation: 1) the location, duration, and inclusive dates for the burn(s); 2) the location of all sensitive features that might be impacted by smoke; 3) where weather forecasts will be obtained and how it will be used to prevent smoke impacts; 4) how weather changes will be monitored and what will be done to reduce or mitigate smoke impacts if unfavorable weather occurs after ignition; 5) considerations for visibility impacts; 6) how coordination with air quality authorities having jurisdiction will be accomplished; 7) procedures that will be used to coordinate with other concerned agencies; 8) how the public will be informed prior to, during, and after the burn; 9) actions to enhance the active fire phase and reduce the smoldering phase; 10) actions to validate predicted smoke dispersal conditions; 11) alternative disposal options for material being open burned. [1] Land clearing open burn approvals must be sent out by DEC within thirty days after receipt of a completed application. The approval must have a date of expiration. [1] A primary focus of an Alaska SMP, when developed, will focus on public education and outreach. We are finding that involving the public early in the burn planning stages greatly improves the success of the entire process. In addition, interagency communication is another primary focus of DEC s open burning process. [3]
4. How is information on the SMP or other requirements disseminated to burners?	Most agricultural land management agencies know to call DEC when anyone within their jurisdiction is planning on burning. Most agricultural burning would be done for disposal of land clearing debris. There are few, if any, large-scale stubble burns. [3] Specific burning requirements are outlined on the burn approval that is issued by DEC. Currently, land management agencies assist DEC in disseminating information, conducting oversight, and providing technical assistance to burners. [3]
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	There are no training opportunities available in Alaska. DEC sends as much educational information as possible along with the burn approval. [3]
6. How is the program funded?	General funds and EPA Grants. [3]

Smoke Management Program Component	State
	Alaska
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	Agricultural burning is coordinated with as many jurisdictions and authorities as possible. [3] Wildland and prescribed burning are also regulated by the state s Open Burning Policy & Guidelines. All types of burning activities are coordinated so that public health and the environment are protected as much as possible.[3]
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	For land clearing, a summary report listing types of fuels and quantities burned, the number of days burning occurred, and the meteorological conditions during the burn may be required by the DEC as part of the approval conditions. [1]
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	Agricultural burning is primarily used for disposing of land clearing debris. Due to excellent interagency communication and cooperation, other types of burning are generally discouraged by land management agencies, including the state Agricultural Extension Agency. [3]
10. What time of year is burning conducted for each major fuel type or crop?	Due to hazardous wildfire conditions that exist during the summer, agricultural burning is limited to Fall and Spring when unfavorable air dispersion conditions tend to exist. [3]
11. What actions are required to minimize emissions from fire?	When open burning is permitted by the DEC, the permittee must provide for the most efficient combustion possible for the material to be burned. [1] A person may not cause or permit any emission that is injurious to human health or welfare, animal or plant life, or property, or that would unreasonably interfere with the enjoyment of life or property. [1] Each prescribed burning applicant will have an operational plan of action documenting contingency actions to follow if prescriptive conditions are exceeded. [1] In practice, most burners look for favorable weather patterns that tend to reduce emissions and enhance dispersion. Scheduling burns in this way seems to be highly effective. Some burners also use portable fans on-site to enhance combustion. Material must be dry prior to ignition, and non-combustibles must be separated from the burnables, as required by the DEC regulations. [3]
Smoke Management	
12. What actions are required to prevent	See Question #11.

Smoke Management Program Component	State
	Alaska
or mitigate smoke impacts?	
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	Persons with approved open burning plans should work directly with the National Weather Service Fire Weather Forecasters or local fire officials to obtain spot weather forecasts for expected fire escapement and smoke conditions at each specific burn site. [1] Open burning is prohibited in an area if the DEC declares an air quality advisory (due to inadequate air ventilation) stating that burning is not permitted in that area for the day. [1] If the DEC declares an air quality advisory, it will (1) request voluntary emission curtailments from any person issued a permit whose facility s emissions might impact the area subject to the advisory; and (2) publicize actions to be taken to protect public health. [1] The DEC will, in its discretion, declare an air episode and prescribe and publicize curtailment action when the concentration of an air contaminant in the ambient air has reached, or is likely in the immediate future to reach established concentrations. [1] Concentrations are established in the rules for three episode types and four air contaminants. The episode types are: Air alert, Air warning, or Air emergency. The contaminants are: sulfur dioxide, PM10, PM10 from wood burning (wood smoke control areas), and carbon monoxide. (Please see table at the end of this survey for the concentrations triggering an air episode). [1] For land clearing, if the DEC determines that the airshed is being overloaded with smoke, a termination of the existing and proposed burning may be required. Limitations may have to be placed on the burn for easy shutdown. [1]
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	It is the policy of the DEC to encourage other methods of disposal where possible. [1] Burn plans must address alternative disposal options for material being open burned. [1] Unfortunately, the disincentives usually outweigh the incentives (financial limitations, remoteness, severe conditions, resistance from burners, etc.). Nationwide, more incentives are needed to support alternative methods of burning. DEC becomes involved in any technological advance or assistance that becomes available and promotes these methods whenever it is reasonable and appropriate to do so. DEC also encourages burners to track emission reduction achieved by any alternative methods that are used. [3]
15. Are the public notified of planned burning? If so, please describe how.	A person required to provide public notice of open burning must issue the notice through the local news media or by other appropriate means if the area of the open burning does not have local news media. The public notice must be issued as directed by the DEC and must: state the name of the person conducting the burn; provide a list of material to be burned; provide a telephone number to contact the person conducting the burn before and during the burn; and the expected time, date, and location of the open burning. [1]

Smoke Management Program Component	State
	Alaska
	Public notice and involvement is an integral part of the open burning process in Alaska. Many remote communities do not have adequate notification media, so creativity and resourcefulness are often required in order to achieve the desired result. Some communities call each resident that has a phone, some communities hand deliver notices. In areas where smoke impacts have been problematic, public meetings are held when appropriate. [3]
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	At present, there is no SMP for agricultural burning. However, burner interaction is encouraged by DEC and other agencies because it has been found through experience that interaction improves burning practices. [3]
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	Burn plans must address considerations for visibility impacts and the location of all sensitive features that might be impacted by smoke. [1] For land clearing, the applicant may be required to obtain meteorological information for the burn day, specifically wind speed, wind direction, and ceiling level, both for the start of the burn and forecasted for the duration of the burn. If the wind direction would allow smoke to impact on sensitive areas, burning may be denied for that period. [1]
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	Agricultural burns are treated like any other type of open burn. Permitted burns generally do not produce enough smoke to cause a violation of the nuisance regulation (the category containing the greatest number of open burn violations). Permitted burners generally have enough information, support and oversight from DEC and/or at least one other agency so that burns are accomplished in a reasonable fashion. [3] Non-permitted burns create the greatest problem. Permits are only required for land clearing debris from greater than 40 acres. Stubble or broadcast burns technically would not require an approval from DEC. Neither would burning debris from less than 40 acres. [3] *Continued on next page*
18. Continued	For permitted and non-permitted burners, enforcement tools include phone conversations, in person meetings, warning letters, notices of violation, and Nuisance Abatement Orders. The DEC does not have the ability to assess monetary fines for open burn infractions. Court-assessed penalties are generally not pursued except in blatant, criminal-type violations where the burner knew that violations would occur and public health would be impacted if the burn was ignited or allowed to continue. Local authorities are generally involved whenever possible. Local ordinances are encouraged in order to allow local communities to deal more effectively with on-going or chronic infractions. [3]

Smoke Management Program Component	State
	Alaska
Public Education	
19. Are there any public educational programs in place? If so, please describe.	Alaska agricultural programs are small enough (it has very few farming areas) that DEC is usually aware of who is burning and when. DEC has excellent working relationships with the Agricultural Extension offices, USDA Research offices, State agricultural offices, and the burners themselves, so that personal interaction is the primary method of education and communication. When there are area-wide problems, DEC initiates public meetings in conjunction with agriculture authorities in the area to try to provide solutions where necessary. DEC prefers education to enforcement, and it seems to work most of the time. [3]
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	The program tracks numbers of complaints and resolution methods, enforcement actions, number of approvals (permits) issued, and burn notifications,. Since the program consists of one FTE statewide, the program is not large enough to benefit from official program evaluation criteria. [3]
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	None
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Ann Lawton, Alaska DEC; (907) 269-3066; **ann_lawton@envircon.state.ak.us**.

Source of summary information:

[1] Arizona Administrative Code, R18-2-602: Unlawful Open Burning, found at **http://www.sosaz.com/public_services/Title_18/18-02.htm**

[2] Arizona Department of Environmental Quality, Arizona Guidelines for Open Burning, found at **http://www.adeq.state.az.us/environ/air/permit/burngd.html**

[3] Arizona Department of Environmental Quality, Burn Permit Application Form, found at **http://www.adeq.state.az.us/environ/air/permit/burnfm.html**

[4] Arizona Revised Statutes, 49-501: Unlawful Open Burning; Definition; Exceptions; Fine, found at **http://www.azleg.state.az.us/ars/49/501.htm**

[5] WESTAR, Western States Agricultural Burning Survey, 1999.

[6] Varma Sunil, Arizona Department of Environmental Quality; personal communication with Stephanie Walsh, EC/R Incorporated, October 23, 2000, and comments dated November 13, 2000.

Special Note:

This survey was reviewed by the Arizona Department of Environmental Quality. For more information, contact Varma Sunil, AZ DEQ, 3003 N. Central Avenue, Phoenix, AZ, 85012-2905.

Smoke Management Program Component	State
	Arizona
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	The state s open burning rules regulate agricultural burning. Agricultural burning is not covered in the Arizona Smoke Management Program. [1] The Arizona Department of Environmental Quality (ADEQ) has regulatory authority of the open burning rules. [1]
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to	Arizona does not have a SMP for agricultural burning.

Smoke Management Program Component	State
	Arizona
make burn/no burn decisions?	
3. Please describe the SMP. What are the requirements and general practices (voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	The open burning rules state that it is unlawful for any person to burn any open outdoor fire. Exceptions to the provisions of the rule include fires set for the purpose of control through vegetative manipulation. [1] The Permits Section of the Office of Air Quality issues permits for open burning. Burners must submit a Burn Permit Application Form. [2] Permission for the setting of any fire must be given in writing, and a copy of such written permission must be transmitted immediately to the Director of the Department of Environmental Quality (Director) and the control officer, if any, of the county, district or region in which such fire is allowed. [1] The setting of any fire must be constructed in a manner and at such time as approved by the Director, unless doing so would defeat the purpose of the exemption. [1] The Director or the air pollution control officer, if any, may delegate the authority for the issuance of allowable open burning permits to responsible local officers. [1] Burners must notify the local fire fighting agency prior to each open burning. Such agency may require the burner to obtain a permit from them before being allowed to burn and may prohibit open burning when atmospheric conditions or local circumstances make such fires hazardous. [2] The ADEQ may delegate authority to issue open burning permits to local authorities. [6]
4. How is information on the SMP or other requirements disseminated to burners?	The open burning permit contains the requirements. [6]
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	No. [6]
6. How is the program funded?	General appropriations. [6]
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	No. [6]

Smoke Management Program Component	State
	Arizona
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	The Burn Permit Application Form requires various information. This includes: applicant personal information, burning location description and county, type of material to be burned, quantity of material to be burned, how the material will be burned (i.e., piled, etc.), anticipated burn duration, purpose of burning, proximity of nearby residences, a map of the burn location, and fire department and control information. [3]
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	The following information is for Yuma County: [5] Wheat stubble: 3,000 to 5,000 acres Bermuda grass: approximately 13,000 acres Citrus grove slash: amount not recorded because it only occurs approximately every 20 years when the trees mature and no longer bear fruit.
10. What time of year is burning conducted for each major fuel type or crop?	Wheat stubble is burned in June and July, and Bermuda grass is burned in March. [5]
11. What actions are required to minimize emissions from fire?	Material to be burned must be dry, readily combustible, and placed in any of the following arrangements in such quantities that it will be completely consumed within the permitted burn hours: piled, collected in a pit, or ignited in place using hand held torches on ditch banks and/or fence rows. [2]
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	Open burning permits must contain a provision that all burning be extinguished at the discretion of the Director or his authorized representatives during periods of inadequate atmospheric smoke dispersion, periods of excessive visibility impairment which could adversely affect public safety, or periods when smoke is blown into populated areas so as to create a public nuisance. [1]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle	Burners may not open burn when any air stagnation advisory is in effect in the area of the burn or during periods when smoke can be expected to accumulate to the extent that it will significantly impair visibility. [2] Open burning must be conducted only during wind conditions which prevent dispersion of smoke into populated areas, do not cause visibility impairment on traveled roads or airports to the extent that a safety hazard results, do not create a public nuisance, and do not cause uncontrollable spreading of the fire. [2] Burning is not allowed at night. [2] Burners are only allowed to burn between the following hours: [2]

Smoke Management Program Component	State
	Arizona
given current and planned burn activity)?	April through September: Start no earlier than 9:00 a.m. and have the fire out by 4:00 p.m. October through March: Start no earlier than 9:00 a.m. and have the fire out by 3:00 p.m. November through February: Start no earlier than 10:00 a.m. and have the fire out by 2:00 p.m.
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	No. [6]
15. Are the public notified of planned burning? If so, please describe how.	The State does not require public notification. [6]
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	There is no SMP for agricultural burning.
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	Open burning permits must contain a provision that all burning be extinguished at the discretion of the Director or his authorized representatives during periods of inadequate atmospheric smoke dispersion, periods of excessive visibility impairment which could adversely affect public safety, or periods when smoke is blown into populated areas so as to create a public nuisance. [1] Burners may not open burn when any air stagnation advisory is in effect in the area of the burn or during periods when smoke can be expected to accumulate to the extent that it will significantly impair visibility. Such visibility impairment can be anticipated during periods of heavy regional haze and/or calm wind conditions. [2] Open burning must be conducted only during wind conditions which prevent dispersion of smoke into populated areas, do not cause visibility impairment on traveled roads or airports to the extent that a safety hazard results, do not create a public nuisance, and do not cause uncontrollable spreading of the fire. [2]
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	Any violation of the open burning rules will be punishable by a fine not to exceed twenty-five dollars. [4]
Public Education	
19. Are there any public educational	No. [6]

Smoke Management Program Component	State
	Arizona
programs in place? If so, please describe.	
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	No. [6]
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	None. [6]
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Sunil Varma, Arizona Department of Environmental Quality; (602) 207-2322; **varma.sunil@ev.state.az.us**. Rana Kazemnia, Arizona Department of Environmental Quality; (602) 207-2332; **kazemnia.rana@ev.state.az.us**.

Source of summary information:

[1] Pima County Code 17.12.480 to 17.12.500, **http://www.co.pima.az.us/cob/code/c.76.htm#17.12.480**.

[2] Bill Maxwell, Pima County Department of Environmental Quality; personal communication with Stephanie Walsh, October 25 and November 2, 2000.

Special Note:

This survey was reviewed by the Pima County Department of Environmental Quality. For more information, contact Bill Maxwell, Pima County DEQ, 130 West Congress Street, 3rd Floor, Tucson, AZ, 85701.

Smoke Management Program Component	Pima County Arizona
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	Agricultural burning is regulated under Pima County Code for open burning, 17.12.480. The County Department of Environmental Quality (DEQ) has regulatory authority. [1]
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	There is no SMP for agricultural burning. Burning is allowed with a permit. The permit is valid for 30 days. The burner can burn on up to three of those days. There are no burn/no-burn decisions. [2]
3. Please describe the SMP. What are the requirements and general practices (voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	There is no SMP for agricultural burning. People are only allowed to burn tumbleweeds. DEQ inspectors check what each applicant plans to burn. If there are materials other than tumbleweeds (such as grass clippings), DEQ will not issue the permit. [2] *Continued on next page*
3. Continued	A temporary open burning permit shall not exceed three consecutive or non-consecutive days within a thirty-day period. An extended open burning permit shall expire as specified on the original application, and shall in no case exceed ninety days. A person granted an open burning permit must comply with the following: (1) permissible burning hours are noon to 4:00 p.m. unless stated in the permit; (2) burning must be a safe distance from structures;

Smoke Management Program Component	Pima County Arizona
	(3) burning must be constantly attended with reasonable control tools at hand; (4) burning may not be conducted on public land or on other land not owned or leased by the permittee without written permission from the owner or land manager; (5) fire must be dead out when left; and (6) the burning of materials other than those specified by the permit is prohibited. [1]
4. How is information on the SMP or other requirements disseminated to burners?	The Information Services Division of DEQ puts out brochures on open burning. [2] Burn requirements are established in each permit. [2]
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	No. [2]
6. How is the program funded?	Funds received for open burning permits are deposited in a special public health fund and are used by the Control Officer to defray the costs of implementing open burning provisions. [1]
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	The DEQ does not coordinate with surrounding jurisdictions. It is possible that the local fire departments within the county coordinate amongst themselves. Some towns in the county ban open burning all together. [2]
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	This information is not collected. The DEQ can estimate the amount of tumbleweed burning by the number of one-, two-, and three-day permits issued. [2]
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	Most of the burning is of tumbleweeds. There is some agricultural burning in rural areas. The DEQ also issues some open burning permits for pyrotechnics at film sites. [2]
10. What time of year is burning conducted for each major fuel type or	Tumbleweeds are burned in the fall. [2]

Smoke Management Program Component	Pima County Arizona
crop?	
11. What actions are required to minimize emissions from fire?	The burning of materials other than those specified by the permit is prohibited and the fire must be dead out when left. [1] People are only allowed to burn tumbleweeds. DEQ inspectors check what each applicant plans to burn. If there are materials other than tumbleweeds (such as grass clippings), DEQ will not issue the permit. [2]
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	A temporary open burning permit shall not exceed three consecutive or non-consecutive days within a thirty-day period. An extended open burning permit shall expire as specified on the original application, and shall in no case exceed ninety days. A person granted an open burning permit may only burn between noon to 4:00 p.m. unless stated in the permit, the burning must be a safe distance from structures, and the burning must be constantly attended with reasonable control tools at hand. [1]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	The permit conditions only allow burning from noon until 4:00 p.m. [2] The fire control officer can require a burn be terminated if there are concerns about air quality. [2]
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	No. There is no other viable alternative to disposing of tumbleweeds. Tumbleweeds are difficult to collect and compress, and the county does not want brought to the landfill. [2]
15. Are the public notified of planned burning? If so, please describe how.	There are no public notification requirements. Permittees are required to call DEQ and their local fire department and notify them when they are going to burn. Some burn inspectors encourage permittees to alert their neighbors of an upcoming burn to prevent them from being alarmed by the fire. [2]
16. If the SMP is voluntary, are there incentives for burner participation?	There is no SMP for agricultural burning.

Smoke Management Program Component	Pima County Arizona
Please describe the incentives.	
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	No. [2]
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	Violators must extinguish the fire and are given a notice of violation. The notice requires them to appear in court where a fine of up to $25 may be issued. Arizona Revised Statutes 49-501 sets the maximum fine at $25. [2]
Public Education	
19. Are there any public educational programs in place? If so, please describe.	The Information Services Division of DEQ puts out brochures on open burning. [2]
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	No. [2]
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	The list is complete.
22. Please list two persons to contact for any follow-up questions (include	Bill Maxwell, Pima County Department of Environmental Quality, (520) 740-3340, **bmaxwell@deq.co.pima.az.us**.

Smoke Management Program Component	Pima County Arizona
name, agency, phone number, and email if available).	Melissa Geier, Pima County Department of Environmental Quality, (520) 740-3340, **mgeier@deq.co.pima.az.us**.

Source of summary information:

[1] The Pinal County Air Quality Control District, Code of Regulations as amended July 29, 1998, **http://co.pinal.az.us/AirQual/files/CodeOfRegulations.PDF**.

[2] The Pinal County Air Quality Control District web site, **http://co.pinal.az.us/AirQual/**.

[3] Arizona Revised Statutes, Title 49, The Environment, Section 501, Unlawful open burning; definition; exceptions; fine, **http://www.azleg.state.az.us/ars/49/title49.htm**.

[4] Donald Gabrielson, Director, Pinal County Air Quality Department; personal communication with Stephanie Walsh, EC/R Incorporated, on October 27, 2000, and comments dated December 6, 2000.

[5] Pinal County Temporary Open Burning Permit.

Special Note:

This survey was reviewed by the Pinal County Air Quality Department. For more information, contact Dan Gabrielson, Director, Pinal County AQCD, P.O. Box 987, Florence, AZ, 85232.

Smoke Management Program Component	Pinal County Arizona
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	Agricultural burning is regulated by the Pinal County Air Quality Control District (District).
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	There is no SMP for agricultural burning. Agricultural burning permits are good for one year; there are no restrictions on which days burning can take place. [4]
3. Please describe the SMP. What are the requirements and general practices	A permit is required or any open burning, including agricultural burning. A copy of all open burn permits is sent to the Director of the Department of Environmental Quality and to the Control Officer. All permits shall contain

Smoke Management Program Component	Pinal County Arizona
(voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	conditions limiting the manner and the time of the setting of fires as specified in the Arizona Guidelines for Open Burning. All burning must be extinguished at the discretion of the Control Officer or his/her authorized representative during periods of inadequate smoke dispersion, periods of excessive visibility impairment which could adversely affect public safety, or periods when smoke is blown into a populated area so as to create a public nuisance. [1] Agricultural burning is allowed for weed control or abatement, clearing fields or ditches of vegetation, or the disposal of other naturally grown products of horticulture, provided that no materials that generate toxic fumes, such as oleander leaves or branches, may be burned. [1] A fee is charged for an open burning permit by the District. Burning may be separately restricted by a fire department/district. [1] Agricultural burning permits are good for one year; there are no restrictions on which days burning can take place. Agricultural burning is supposed to occur between 8 a.m. and 4:30 p.m. April through October and between 9:00 a.m. and 4:30 p.m. November through March. Wind speed while burning should not exceed 5 mph. However, people sometimes burn earlier in the morning because they know that windy conditions later in the day may cause a fire hazard. [4][5] Burning must be constantly attended with reasonably necessary control tools on hand at all times. When done, the fire must be completely extinguished. A burn may not exceed 1/4 acre at a time. A propane burner may be used for ditch banks and fence rows. [5]
4. How is information on the SMP or other requirements disseminated to burners?	Requirements are included in the burning permit. [1]
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	No. [4]
6. How is the program funded?	The open burning permit program is funded with burning permit fees and County general funds. [4]
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and	There is no coordination with other jurisdictions or tribes. The Board of Supervisors will likely adopt an ordinance on December 13, 2000, which will impose a geographically limited no-burn ban with regard to both residential wood burning and burning under authority of an open burning permit. The ban will be triggered when

Smoke Management Program Component	Pinal County Arizona
prescribed burning? If yes, please describe.	high CO concentrations are anticipated in neighboring Maricopa County and will only affect the adjoining portion of Pinal County. [4] There is essentially no prescribed burning in Pinal County. [4]
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	Permit records are maintained by the District. However, the most common type of agricultural burn permit provides blanket year-long authorization for a single owner, without imposing an acreage limit or a limit on the number of parcels covered by the permit. [4]
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	Based on inquiry and observation, agricultural burning permits are primarily used for wheat stubble burning and clearing ditch-banks. During 1999, about 17,500 acres were used for wheat production in the County. We have no means to quantify exactly how many of those acres were burned off, or the area of ditch-banks burned annually. [4]
10. What time of year is burning conducted for each major fuel type or crop?	Wheat stubble burning occurs in the Spring. Ditch-bank burning occurs year round, but primarily in the Spring. [4]
11. What actions are required to minimize emissions from fire?	None. [4]
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	All burning must be extinguished at the discretion of the Control Officer or his/her authorized representative during periods of inadequate smoke dispersion, periods of excessive visibility impairment which could adversely affect public safety, or periods when smoke is blown into a populated area so as to create a public nuisance. [1] While the County has authority to order cessation of burning, the short-term nature of a typical agricultural burn, coupled with the geographic size of the County (5300 square miles), effectively precludes the issuance of such an order even if it might be appropriate. [4]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn	All burning must be extinguished at the discretion of the Control Officer or his/her authorized representative during periods of inadequate smoke dispersion, periods of excessive visibility impairment which could adversely affect public safety, or periods when smoke is blown into a populated area so as to create a public nuisance. [1] Agricultural burning permits are good for one year; there are no restrictions on which days burning can take

Smoke Management Program Component	Pinal County Arizona
decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	place. Agricultural burning is supposed to occur between 8 a.m. and 4:30 p.m. April through October and between 9:00 a.m. and 4:30 p.m. November through March. Wind speed while burning should not exceed 5 mph. However, people sometimes burn earlier in the morning because they know that windy conditions later in the day may cause a fire hazard. [4][5] Wind speed while burning should not exceed 5 mph. Burners are required to self-regulate. [5]
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	No. [4]
15. Are the public notified of planned burning? If so, please describe how.	No. [4]
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	There is no SMP for agricultural burning.
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	No. [4]
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	Open burning at a time or in a manner contrary to the terms of the permit or an order from the Control Officer shall constitute a petty offense punishable by a fine not to exceed $25. [3]
Public Education	
19. Are there any public educational programs in place? If so, please describe.	There is no formal education program in place. However, the District responds to public complaints by meeting with offenders. Often the offenders are issued a permit and the regulations are reviewed with them. The District has also run some articles on smoke and open burning with a focus on the nuisance impacts. [4]
Program Evaluation	

Smoke Management Program Component	Pinal County Arizona
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	There are no provisions to review the effectiveness of the open burning permit program specifically. However, the effectiveness of the Air Quality program is reviewed regularly. One method of measuring performance is the continued monitoring of ambient air quality. [4]
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	None.
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Donald Gabrielson, Director, Pinal County Air Quality Department, (520) 868-6929, **don.gabrielson@co.pinal.az.us**.

Source of summary information:

[1] Yuma County Guidelines for Open Burning: Agricultural/Commercial Burn.

[2] WESTAR, Western States Agricultural Burning Survey, 1999.

[3] Curt Foster, Fire Marshall, Rural/Metro Fire Department, Yuma County, AZ; personal communication with Stephanie Walsh, EC/R Incorporated, on November 1, 2000.

[4] Sunil Varma, Environmental Engineering Specialist, Air Permits, Arizona DEQ; comments dated March 28, 2001.

Special Note:

This survey was reviewed by the Rural/Metro Fire Department, Yuma County, AZ and the Arizona DEQ. For more information, please contact Curt Foster, Fire Marshall, Rural/Metro Fire District, 660 East 18th Place, Yuma, AZ, 85356.

Smoke Management Program Component	Yuma County Arizona
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	Agricultural burning is regulated by the State. The AZ Department of Environmental Quality delegated authority to issue open burning permits to the Yuma County Department of Health, which in turn entered into a contract with the Rural/Metro Fire Department (RMFD), a private fire protection service. The RMFD currently manages the open burning permit program in Yuma County. [2]
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	There is no SMP. The Fire Marshall at the RMFD has the authority to make no burn/no-burn decisions. [3]
3. Please describe the SMP. What are the requirements and general practices (voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	Material to be burned must be dry, readily combustible, and placed in piles, collected in a pit, or ignited in a place such as ditch banks and/or fence rows in such quantities that it will be completely consumed within the permitted burn hours. Piled or pit-contained material must have a minimum clearance of 50' from any structure. Burns may be started using items such as matches, flares, or hand held torches. You may not start a fire using tires, tar paper, oil or liquified petroleum products such as gasoline or diesel. You may not use any ignition device that

Smoke Management Program Component	Yuma County Arizona
	causes the production of black smoke. [1] Burning may start no earlier than 9:00 am, and fires must be out by 3:00 p.m. Burning is not allowed at night, unless it is the type of fire that does not require a permit. [1][4] Burners are subject to the following responsibilities or requirements: (1) you must notify the RMFD before and at the completion of the burn; (2) you may not burn when any air stagnation advisory is in effect in the area of the burn, or during periods when smoke can be expected to accumulate to the extent that it will significantly impair visibility (such as during periods of heavy regional haze and/or calm wind conditions); (3) burning is only allowed during wind conditions which prevent dispersion of smoke into populated areas, do not cause a visibility impairment on traveled roads or airports resulting in safety hazards, does not create a public nuisance, does not cause uncontrollable spreading of fire; (4) you may be required by the RMFD to extinguish or abstain from burning during periods of inadequate smoke dispersion, excessive visibility impairment, or at other times when public health or safety could be adversely affected; (5) you must be present at all times during burning and must have available any necessary equipment (i.e. water supply, water hose, shovel, sand, etc.) to control the burn and put out the fire if the need arises; (6) you must completely extinguish the fire before leaving it unattended; (7) you must have a copy of the burn permit on-site during the burn; and (8) you may not conduct open burning in a solid or hazardous waste landfill or their associated collection points. [1] There are materials that may not be burned with an open burning permit, including poison oak, poison ivy, poison sumac, containers that contained pesticides. [1]
4. How is information on the SMP or other requirements disseminated to burners?	Burning requirements are provided with the burn permit. [1]
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	No formal training or certification is available. If people come in with questions, the RMFD will provide informal training and assistance. [3]
6. How is the program funded?	The program is funded through permit fees. [3]
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	Many farmers hire the RMFD to do the necessary burning on their property, and the RMFD does most of the burning in the district. There is coordination between the county and city. The RMFD will also call authorities in neighboring Mexico to find out how much burning is happening on a given day and use that information to guide the burn/no-burn decision. [3]

Smoke Management Program Component	Yuma County Arizona
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	The number of acres burned is recorded and kept on file at RMFD. [2]
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	Wheat stubble: 3,000 to 5,000 acres [2] Bermuda grass: approximately 13,000 acres [2] Citrus grove slash: amount not recorded because it only occurs approximately every 20 years when the trees mature and no longer bear fruit. [2]
10. What time of year is burning conducted for each major fuel type or crop?	Wheat stubble is burned in June and July, and Bermuda grass is burned in March. [2]
11. What actions are required to minimize emissions from fire?	Material to be burned must be dry, readily combustible, and placed in piles, collected in a pit, or ignited in a place such as ditch banks and/or fence rows in such quantities that it will be completely consumed within the permitted burn hours. Burns may be started using items such as matches, flares, or hand held torches. You may not start a fire using tires, tar paper, oil or liquified petroleum products such as gasoline or diesel. You may not use any ignition device that causes the production of black smoke. [1] There are materials that may not be burned with an open burning permit, including poison oak, poison ivy, poison sumac, containers that contained pesticides. [1]
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	Burning may start no earlier than hour after sunrise, and fires must be out by 3:00 p.m. If you are burning with a mechanic burner such as the Air Curtain Destructor or propane burners to burn ditch banks, you may start no earlier than hour after sunrise and must finish by 4:00 p.m. Burning is not allowed at night, unless it is the type of fire that does not require a permit. [1] Piled or pit-contained material must have a minimum clearance of 50' from any structure. Burns may be started using items such as matches, flares, or hand held torches. [1] There are materials that may not be burned with an open burning permit, including poison oak, poison ivy, poison sumac, containers that contained pesticides. [1] Burners are subject to several requirements, including: (1) you may not burn when any air stagnation advisory is

Smoke Management Program Component	Yuma County Arizona
	in effect in the area of the burn, or during periods when smoke can be expected to accumulate to the extent that it will significantly impair visibility (such as during periods of heavy regional haze and/or calm wind conditions); (2) burning is only allowed during wind conditions which prevent dispersion of smoke into populated areas, do not cause a visibility impairment on traveled roads or airports resulting in safety hazards, does not create a public nuisance, does not cause uncontrollable spreading of fire; (3) you may be required by the RMFD to extinguish or abstain from burning during periods of inadequate smoke dispersion, excessive visibility impairment, or at other times when public health or safety could be adversely affected; (4) you must be present at all times during burning and must have available any necessary equipment (i.e. water supply, water hose, shovel, sand, etc.) to control the burn and put out the fire if the need arises; (5) you must completely extinguish the fire before leaving it unattended. [1]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	Burning may start no earlier than 9:00 am and fires must be out by 3:00 p.m. Burning is not allowed at night, unless it is the type of fire that does not require a permit. [1][4] Burners are subject several requirements, including the following: (1) you may not burn when any air stagnation advisory is in effect in the area of the burn, or during periods when smoke can be expected to accumulate to the extent that it will significantly impair visibility (such as during periods of heavy regional haze and/or calm wind conditions); (2) burning is only allowed during wind conditions which prevent dispersion of smoke into populated areas, do not cause a visibility impairment on traveled roads or airports resulting in safety hazards, does not create a public nuisance, does not cause uncontrollable spreading of fire; (3) you may be required by the RMFD to extinguish or abstain from burning during periods of inadequate smoke dispersion, excessive visibility impairment, or at other times when public health or safety could be adversely affected. [1] The Fire Marshall uses the following information to make burn/no-burn decisions: status of the inversion layer; wind direction and speed (obtained from the National Weather Service); and the amount of burning occurring in Mexico (adjacent to the County). [3]
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	No. [1]
15. Are the public notified of planned burning? If so, please describe how.	No. [3]
16. If the SMP is voluntary, are there incentives for burner participation?	There is no SMP.

Smoke Management Program Component	Yuma County Arizona
Please describe the incentives.	
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	Indirectly. The Fire Marshall uses the following information to make burn/no-burn decisions: status of the inversion layer; wind direction and speed (obtained from the National Weather Service); and the amount of burning occurring in Mexico (adjacent to the County). [3]
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	Burners are responsible for controlling their fires at all times. Any fire that gets out of control and requires the fire RMFD to respond may result in a fine, fee, and/or a revoked burn permit. Burners may also be subject to civil penalties from damages caused by fires started by their open burning. [1]
Public Education	
19. Are there any public educational programs in place? If so, please describe.	There is no formal public education program in place. Sometimes the RMFD will meet with neighbors to discuss the details of a planned burn. [3]
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	The program is reviewed every six months. The RMFD tries to minimize the number fires that are reported by citizens that are actually just permitted agricultural burns. [3]
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	None
22. Please list two persons to contact for any follow-up questions (include	Curt Foster, Fire Marshall, Rural/Metro Fire Department, Yuma, AZ, (520) 783-1805. David Rathbun, Fire Chief, Rural/Metro Fire Department, Yuma, AZ, (520) 783-1805.

Smoke Management Program Component	Yuma County
	Arizona
name, agency, phone number, and email if available).	Sunil Varma, Environmental Engineering Specialist, Air Permits, Arizona DEQ, (602) 207 2322, varma.sunil@ev.state.az.us

Source of summary information:

[1] Smoke Management Guidelines for Agricultural and Prescribed Burning. Title 17, California Code of Regulations, Sections 80100 through 80330. March 23, 2000, **http://ccr.oal.ca.gov/cgi-bin/om_isapi.dll?clientID=3432486&infobase=ccr&softpage=Browse_Frame_Pg42**.

[2] WESTAR, Western States Agricultural Burning Survey, 1999.

[3] California Air Resources Board, Smoke Management Program web site, **http://www.arb.ca.gov/smp/smp.htm**.

[4] Karen Magliano, California Air Resources Board; personal communication with Stephanie Walsh, EC/R Incorporated on October 30, 2000, and comments dated December 8, 2000.

Special Note:

Title 17 provides general direction to the air districts on developing smoke management plans. Additional changes to Title 17 have been proposed but as of yet have not been adopted. This survey is based on the March 23, 2000 version of Title 17. This survey was reviewed by the California Air Resources Board. For more information, contact Karen Magliano, CARB, P.O. Box 2815, Sacramento, CA, 95810.

Smoke Management Program Component	State
	California
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	The Smoke Management Guidelines for Agricultural and Prescribed Burning (Guidelines) provide direction to air pollution control and air quality management districts (air districts) in the regulation and control of agricultural burning, including prescribed burning, in California. Each air district must adopt a smoke management program (SMP) consistent with the Guidelines and submit it to the California Air Resources Board (ARB) for approval. The Guidelines are intended to provide flexibility to air districts in the development and implementation of their smoke management programs. [1]
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	The Guidelines broadly define agricultural burning to include: open outdoor fires used in agricultural operations...or used in forest management, range improvement, or the improvement of land for wildlife and game habitat, or disease or pest prevention. Each air district must adopt a SMP consistent with the Guidelines and submit it to the ARB for approval. Every day, for each of the state s air basins or other specified areas, the ARB will announce by 3:00 p.m. whether the following day is a permissive burn day or no-burn day, or whether the decision will be announced on the following day. If conditions preclude a forecast until the next day, the decision will be announced by 7:45 a.m.

Smoke Management Program Component	State
	California
	An air district may, by special permit, authorize burning on days designated by the ARB as no-burn days if the denial of such permit would threaten imminent and substantial economic loss. [1]
3. Please describe the SMP. What are the requirements and general practices (voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	A valid permit must be obtained from a district or designated agency prior to burning. Each applicant for a permit must provide information requested by the district and the designated agency. [1] Permits in some cases are issued by local fire districts, and in other cases by land management agencies or the state Department of Forestry and Fire Protection. Permitting by local fire districts is being gradually taken over by local air pollution control districts. [2] The air district SMPs must include: a daily burn authorization system that regulates agricultural burning in order to minimize smoke impacts on smoke sensitive areas, avoid cumulative smoke impacts, and prevent a public nuisance - the system shall not allow more burning on a daily basis than in appropriate for the meteorological or air quality conditions; procedures for issuing notice of permissive-burn, marginal-burn, or no-burn days that shall be coordinated with fire protection agencies; procedures for acquiring information on amounts of material burned on each day...and other information needed to establish the burn authorization for the following day; requirements for the registration of all planned burn projects annually or seasonally; procedures for addressing cross-jurisdictional smoke impacts; procedures for enforcement; plans to provide for an analysis and periodic assessment of actions undertaken to minimize smoke; if necessary, plans for prioritizing agricultural burning that the districts can use to minimize smoke impacts; and crop-specific and general rules or regulations given in the Guidelines to minimize smoke and smoke impacts. [1] SMPs vary in sophistication and detail from air basin to air basin. The best program, Sacramento Valley, uses daily near real-time meteorological and air quality data to determine the amount of burning on a given day. During the fall, an intensive program is coordinated by air basin staff, districts, growers, private and state meteorologists to allocate and optimally place the acres for burning each day in order to reduce smoke impacts. During this time, detailed daily records of acres allocated and burned, smoky hours, air quality data and hourly weather information are shared through a computer system. The simplest programs are daily burn/no burn decisions for air basins, made the day before by the ARB. [2]
4. How is information on the SMP or other requirements disseminated to burners?	The ARB maintains a website (**http://www.arb.ca.gov/smp/smp.htm**), as do some of the local air districts. [3]
5. Is burner training available, e.g.,	The ARB provides a two-day burner training session that is primarily for land managers doing prescribed

Smoke Management Program Component	State
	California
certification, qualification, air quality, etc.?	burning. There is no training that specifically targets those doing agricultural burning. [4]
6. How is the program funded?	The program is funded by the individual local air quality districts, which have flexibility in how they obtain funding. The State is exploring means to provide additional funding to the local air quality districts. [4]
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	The Guidelines provide direction to air pollution control and air quality management districts (air districts) in the regulation and control of agricultural burning, including prescribed burning, in California. Each air district must adopt a SMP consistent with the Guidelines and submit it to the ARB for approval. Two or more air districts may choose to implement a regional SMP. SMPs must include procedures for addressing cross-jurisdictional smoke impacts by coordinating with neighboring air districts, regions, or states. [1]
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	A report of burning conducted pursuant to the Guidelines each year must be submitted to the ARB by each air district. The report will include the estimated tonnage or acreage of each waste type burned from open burning in agricultural operations and the estimated tonnage of waste from prescribed burning, and the county where the burning was performed. When an electronic reporting system is established by the ARB, it will be used for providing reports of burning. [1] *Continued on next page*
8. Continued	A yearly report of air district special permits, which authorize burning on days designated by the ARB as no-burn days, must be submitted to the ARB by each air district. The report must include the number of special permits issued, dates of issuance, person(s) to whom the permit was issued, an estimate of the amount of wastes burned pursuant to the permit, and a summary of why denial of each permit would have threatened imminent and substantial economic loss. [1] Air district SMPs must require a post-burn smoke management evaluation by the burner for fires greater than 250 acres. [1] During the fall intensive burning period, the Sacramento Valley Air Basin tracks burning, smoke impacts, and

Smoke Management Program Component	State
	California
	complaints daily. The program is coordinated by air basin staff, districts, growers, private and state meteorologists to allocate and optimally place the acres for burning each day in order to reduce smoke impacts. During this time, detailed daily records of acres allocated and burned, smoky hours, air quality data and hourly weather information are shared through a computer system. [2]
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	Although air districts and their agricultural commissioner counterparts collect data, there is little systematic statewide review of them. [2] In the Sacramento Valley, especially for rice, data are carefully compiled. The fall burn season for rice is September (usually mid-month), to mid-November. Beginning in 2001, State law allows burning only for disease control purposes. Growers will be allowed to burn up to the lesser of 25% of each grower s planted acreage, or 125,000 total acres in the Sacramento Valley Air Basin. For rice the average acreage planted is about 500,000 acres; the range of variation is from about 400,000 to 600,000 acres. [2]
10. What time of year is burning conducted for each major fuel type or crop?	See answer to Question 9 above.
11. What actions are required to minimize emissions from fire?	In the case where, by special permit, an air district authorizes burning on days designated by the ARB as no-burn days, a district will limit the amount of material which can be burned in any one day and only authorize burning which is not likely to cause or contribute to exceedences of air quality standards or result in smoke impacts to smoke sensitive areas. [1] *Continued on next page*
11. Continued	Air district SMPs must: provide plans for analysis and periodic assessment of actions that are undertaken to minimize smoke through the use of pre-fire fuel treatment practices; provide, if necessary, procedures for prioritizing burning that districts can use to minimize smoke impacts and reduce smoke emissions; require vegetation to be in a condition that will minimize the smoke emitted during combustion when feasible; require material to be burned to be piled where possible, unless good silvicultural practices or ecological goal dictate otherwise; require piled material to be burned to be prepared so that it will burn with a minimum of smoke; and include crop-specific and general rules or regulations given in the Guidelines to minimize smoke and smoke impacts. [1]
Smoke Management	
12. What actions are required to prevent	In the case where, by special permit, an air district authorizes burning on days designated by the ARB as no-burn

Smoke Management Program Component	State
	California
or mitigate smoke impacts?	days, a district will limit the amount of material which can be burned in any one day and only authorize burning which is not likely to cause or contribute to exceedences of air quality standards or result in smoke impacts to smoke sensitive areas. [1] Air district SMPs must require the submission of smoke management plans for burn projects greater than 100 acres or estimated to produce more than 10 tons of particulate matter. These plans must contain specific contingency actions that will be taken if smoke impacts occur or meteorological conditions deviate from those specified in the plan. [1] Air district SMPs must: include a daily burn authorization system that regulates burning in order to minimize smoke impacts on smoke sensitive areas, avoid cumulative smoke impacts, and prevent public nuisance; regulate the hours of ignition and burning; include procedures for addressing cross-jurisdictional smoke impacts by coordinating with neighboring air districts, regions, or states; provide, if necessary, procedures for prioritizing burning that districts can use to minimize smoke impacts and reduce smoke emissions; and include crop-specific and general rules or regulations given in the Guidelines to minimize smoke and smoke impacts. [1]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	Air district SMPs must include a daily burn authorization system that will not allow more burning on a daily basis than is appropriate for the meteorological or air quality conditions. Factors to be considered include wind speeds and directions at the surface and aloft, and atmospheric stability, as well as the smoke from all burning activities, including burning in neighboring air districts or regions which may affect the district or region. Air district SMPs must include a description of the meteorological and air quality monitoring data to be used to provide data for determining the basin-wide meteorological and air quality conditions. [1] The ARB will announce the burn/no-burn decision for each air basin. Such notices shall be based on the Meteorological Criteria for Regulating Agricultural Burning and Prescribed Burning for each air basin established in the Guidelines. The ARB may declare a marginal burn day if meteorological conditions approach these criteria and smoke impacts are not expected. A marginal burn day allows a district to authorize limited amounts of burning for individual projects if the district demonstrates that smoke impacts to smoke sensitive areas are not expected as a result of that burning. [1]
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	Air district SMPs must provide plans for analysis and periodic assessment of actions that are undertaken to minimize smoke through the use of non-burn alternatives. [1] Air district SMPs must require the submission of smoke management plans for burn projects greater than 100 acres or estimated to produce more than 10 tons of particulate matter. These plans must contain an evaluation of alternatives to burning considered. [1]
15. Are the public notified of planned	Air district SMPs must require the submission of smoke management plans for burn projects greater than 100

Smoke Management Program Component	State
	California
burning? If so, please describe how.	acres or estimated to produce more than 10 tons of particulate matter. These plans must contain discussion of public notification procedures. [1] Air district SMPs must require procedures for public notification and education, including appropriate signage at burn sites, and for reporting of public smoke complaints. [1]
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	The SMP is not voluntary.
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	The SMP was designed to minimize, or prevent smoke impacts to protect public health and welfare, including visibility. [4]
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	Air district SMPs must include procedures for enforcement. The Guidelines do not further elaborate on enforcement procedures. [1] Occasional aircraft surveillance flights watch for illegal burns, unauthorized firing patterns and smoke impacts. [2]
Public Education	
19. Are there any public educational programs in place? If so, please describe.	The ARB maintains a website, as do some of the local air districts. In addition, the ARB has established a working group to develop public outreach tools and materials. [3]
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	The Guidelines are intended to assure adequate state oversight, including initial program approval and periodic program assessment. [1] Air district SMPs must provide plans for analysis and periodic assessment of actions that are undertaken to minimize smoke through the use of pre-fire fuel treatment practices and non-burn alternatives. [1] Complaints from the public are reviewed and referred to the local districts for comment. There are compliance

Smoke Management Program Component	State
	California
	audits. The Sacramento Valley Air Basin tracks burning, smoke impacts and complaints daily during the fall intensive burning period. [2]
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	None.
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Karen Magliano, CA Air Resources Board, (916) 322-7137. Tina Suarez-Murias, CA Air Resources Board, (916) 323-1495.

Source of summary information:

[1] 1997 Lake County Air Quality Management District Agricultural and Open Burning Report.

[2] Lake County Air Quality Management District Regulations, Chapter VIII, Agricultural Burning.

[3] Report on staff s programmatic review of the Lake County Air Quality Management District s Smoke Management Program, **www.clfa.org/Enclosure1with15day.htm**.

[4] Lake County Air Quality Management District, sample agricultural burning permit.

[5] Susie Roberts, Lake County Air Quality Management District; personal communication with Stephanie Walsh, EC/R Incorporated, on November 8, 2000.

[6] Comments from the Lake County Air Quality Management District dated November 28, 2000.

Special Note:

The Lake County Air Quality Management District regulations for agricultural burning are in accord with the agricultural burning requirements mandated by the State of California. The State of California is currently revising the Agricultural Burning Guidelines in Title 17 of the California Code of Regulations. These changes will require the CA Air Quality Management Districts to revise their local regulations.

This survey was reviewed by the Lake County Air Quality Management District. For more information, contact

Smoke Management Program Component	Lake County Air Quality Management District California
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	Yes, all agricultural burning requires a valid permit issued by Lake County Air Quality Management District (LCAQMD) and/or the designated agency having jurisdiction in the area where the agricultural burning will take place. [2]
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to	Although there is no formal SMP, the LCAQMD has smoke management requirements for all agricultural burners. [2] The burn/no-burn decision is made by the State Air Resources Board (ARB). However, the LCAQMD has the authority to allow or restrict burning contrary to the ARB decision if location conditions justify the decision (see

Smoke Management Program Component	Lake County Air Quality Management District California
make burn/no burn decisions?	Question #3 below for explanation). [2]
3. Please describe the SMP. What are the requirements and general practices (voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	An agricultural burning permit is required. Burning is only allowed on days when it is not prohibited by the ARB. There are 14 agencies to issue agricultural burn permits pursuant to LCAQMD rules and regulations. [2] The LCAQMD may issue a special permit to burn on days designated by the ARB as no-burn days if denial of such permit would threaten imminent and substantial economic loss. [2] The LCAQMD Air Pollution Control Officer (APCO) may designate as a no-burn day any day designated a burn day by the ARB is necessary to protect the ambient air quality from substantial degradation, the public health, and violations of ambient air quality standards. [2] Fire Hazard Season: From June 1 to the end of the fire season, burning is subject to the following conditions: (1) reasonable economic need is established by the applicant; (2) an on site inspection by the local fire agency to determine that fire safety is acceptable; (3) after the on site inspection, the permittee obtains an agricultural burn permit; and (4) permittee agrees to notify the fire department on the day of the burn and to conduct the burn to the extent possible between the hours of 8:00 a.m. and noon or at an agreed upon specific time identified in the issued permit. [2] All burning shall be ignited by approved ignition devices such as fuses, orchard torches, propane torches, pressurized flamethrower-type torches, jellied petroleum devices, matches, fuselighters, commercial fuses, fuel blivets, drip torches, diesel sprayers, or other such approved devices. [2] All material to be burned shall be free of material that is not produced in an agricultural operation. Tires tarpaper and other rubbish likely to cause excessive smoke shall not be burned. All material to be burned shall be arranged so that it will burn with a minimum of smoke and be reasonably free of dirt, soil, and visible moisture. Material shall be dried for a specified amount of time, ranging from seven to 60 days, or for an amount of time determined by the designated agency. [2] The total amount of material that may be burned in each designated district watershed per day shall not exceed the amounts given in the regulation. [2] Maximum care must be taken to keep smoke from drifting into populated areas. Wind direction, topography, thermal inversion and population density shall be considered to minimize smoke reaching nearby populated areas. [2]
4. How is information on the SMP or other requirements disseminated to burners?	The LCAQMD provides handouts for burners and the public on agricultural burning. The burning requirements are given on the agricultural burning permit. The LCAQMD also puts out media releases on agricultural burning. [5]
5. Is burner training available, e.g.,	There is no formal certification given or required. Written and verbal training is provided with permit issuance.

<table>
<tr><th rowspan="2">Smoke Management Program Component</th><th>Lake County Air Quality Management District</th></tr>
<tr><th>California</th></tr>
<tr><td>certification, qualification, air quality, etc.?</td><td>Public outreach/education is provided as necessary and upon request. [6]</td></tr>
<tr><td>6. How is the program funded?</td><td>The program is funded with state funds, and fines and settlements attained through enforcement. [6]</td></tr>
<tr><td>7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.</td><td>Agricultural burning is coordinated with neighboring jurisdictions. [5]
Large burn project plans are shared with adjoining districts. The LCAQMD tracks large agricultural, wildland, and prescribed burns and makes recommendations consistent with the size of the burns, favorable/unfavorable meteorological, and air quality conditions. [6]</td></tr>
<tr><td colspan="2">Emissions</td></tr>
<tr><td>8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?</td><td>Permit information is recorded. The LCAQMD produces a detailed annual report on agricultural, forestry, wild life, and residential burning. [1][6]</td></tr>
<tr><td>9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?</td><td>1997 Estimated Acres Burned: [1]
<table><tr><th>Crop</th><th>Acres</th><th>Crop</th><th>Acres</th></tr><tr><td>Alfalfa Hay</td><td>94</td><td>Pears</td><td>5,259</td></tr><tr><td>Grain</td><td>82</td><td>Perennial Crop</td><td>700</td></tr><tr><td>Grapes</td><td>2,561</td><td>Walnuts</td><td>6,224</td></tr><tr><td>Nursery</td><td>60</td><td>Wild Rice</td><td>60</td></tr><tr><td>Other Hay</td><td>400</td><td>Other Crops*</td><td>71</td></tr></table>*Other crops include almonds, apples, barley, kiwi, peaches, prunes, and vegetables. Thirty or fewer acres were burned for each of these crops.</td></tr>
<tr><td>10. What time of year is burning conducted for each major fuel type or crop?</td><td>The burning season is from November through May. [5]</td></tr>
<tr><td>11. What actions are required to minimize emissions from fire?</td><td>All material to be burned shall be free of material that is not produced in an agricultural operation. Tires tarpaper and other rubbish likely to cause excessive smoke shall not be burned. All material to be burned shall be arranged so that it will burn with a minimum of smoke and be reasonably free of dirt, soil, and visible moisture.</td></tr>
</table>

Smoke Management Program Component	Lake County Air Quality Management District California
	Material shall be dried for a specified amount of time, ranging from seven to 60 days, or for an amount of time determined by the designated agency. [2][4] The total amount of material that may be burned in each designated district watershed per day shall not exceed the amounts given in the regulation. [2]
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	Maximum care must be taken to keep smoke from drifting into populated areas. Wind direction, topography, thermal inversion and population density shall be considered to minimize smoke reaching nearby populated areas. [2]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	The LCAQMD uses remote weather facilities to monitor temperature inversions every day. A computer in the LCAQMD office continuously updates local weather conditions, including winds, temperatures, and visibility. [3] Even conditions for granting economic exemptions include the consideration of meteorological conditions and the likelihood of air quality degradation. [3] On any day for which conditions of abnormal high temperatures, low relative humidity or high wind velocities are anticipated, or existing wildfires create an extreme potential for uncontrolled fires which may cause violations of any ambient air quality standard, the APCO, after receipt of a recommendation from the Lake County Fire Chiefs Association Burning Assessment Committee that such extreme fire hazard conditions exist conducive to uncontrolled fire occurrence, should declare such day a no-burn day. [2] Agricultural burning hours for fire season (May - June) are from 8:00 a.m. through noon; for non-fire season they are from 9:00 a.m. through 3:00 p.m. No burning from June until the end of the fire season. [2][6] Extended burn days shall be determined after consideration of the following factors: (1) prevailing visibility (observed, measured coefficient of haze, and nephlometric back scattering); (2) anticipated frontal movement; (3) existence or expectation of inversions and a non-adiabatic lapse rate (if information is available); (4) previous and next day s burn status; (5) precipitation; and (6) if air quality at the time of determination has degraded to 50% of any ambient air quality standard. [2]
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	Projects subject to CEQA, NEPA, or NSR may be required by a planning agency or the LCAQMD to implement alternatives such as composting, chipping, mulching, vegetation pick-up, and/or disposal. [6]
15. Are the public notified of planned burning? If so, please describe how.	Burners are asked to notify neighbors before they burn. They are also asked to pile materials to be burned in such a way so as not to bother neighbors. [5]

Smoke Management Program Component	Lake County Air Quality Management District California
	Large prescribed burns may be required to public/broadcast public notice. [6]
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	The requirements are not voluntary. [2]
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	Conditions that would affect smoke dispersion are checked daily. If conditions are considered marginal, burning is limited. [5]
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	The LCAQMD has a complaint response system that will direct calls to a staff person any hour of the day or night. Significant burns are flagged on a large wall map so inspectors will be aware of smoke sources in the basin. [3] The LCAQMD can issue fines to people who violate the agricultural burning regulations. [5]
Public Education	
19. Are there any public educational programs in place? If so, please describe.	There is a community relations program which includes volunteer groups working with the LCAQMD and its Board, the management training and technical skills of its smoke managers, and special recognition of the staff by the community and professional societies. [3] The LCAQMD provides handouts for burners and the public on agricultural burning. The burning requirements are given on the agricultural burning permit. The LCAQMD also puts out media releases on agricultural burning. [5]
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	The LCAQMD produces a detailed annual report on agricultural, forestry, wildlife, and residential burning. [1][6]
Further Information	

Smoke Management Program Component	Lake County Air Quality Management District
	California
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	None
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Bob Reynolds, Lake County AQMD, (707) 263-7000, **bobr@pacific.net**. Ross Kauper, Lake County AQMD, (707) 263-7000.

Source of summary information:

[1] The California Health and Safety Code, Agricultural Burning (CHSC)

[2] Title 17 of the California Code of Regulations (CCR), both current and revised.

[3] The Sacramento Valley Smoke Management Program (formerly called the Annual Agricultural Burn Plan.)
Sacramento Basin Burn Coordinator: Fife Environmental

[4] Sacramento Metro Air Quality Management District Rule 501, Agricultural Burning. Available at http://www.airquality.org/rules/rule501.htm.

[5] Sacramento Metro Air Quality Management District Rule 303, Agricultural Burning Permit Fees. Available at http://www.airquality.org/rules/rule303.htm.

[6] Sacramento Valley Basinwide Air Pollution Control Council s Smoke Management Plan Template for prescribed burning permit applicants. The ARB Working Group is still reviewing (this document. Suggested modifications may be forthcoming.)

[7] Comments received from Sacramento Metro Air Quality Management District on December 8, 2000.

Special Note:

This survey was reviewed by Sacramento Metro Air Quality Management District. For more information, contact Susan Engstrom, Sacramento Metro AQMD, 777 12th Street, 3rd Floor, Sacramento, CA 95814-1908, 916-874-6386.

Smoke Management Program Component	Sacramento Metro Air Quality Management District California
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	The Sacramento Metro Air Quality Management District (SMAQMD) regulates agricultural burning through Rule 501 Agricultural Burning and Rule 303 Agricultural Burning Permit Fees to reduce air pollution through the regulation of agricultural burning. [4][5] The Air Pollution Control Officer (APCO) acts on behalf of the SMAQMD. [4] The APCO contracts the field elements of this program to the local Agricultural Commissioner. [7]
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What	Yes. All California air districts have been required for many years to have an implementation plan regarding agricultural burning. [2] Title 17 of the CCR contains specific provisions regarding fuel preparation and burn / no-burn day decisions.

Smoke Management Program Component	Sacramento Metro Air Quality Management District California
agency/office has the central authority to make burn/no burn decisions?	The SMAQMD s Rule 501 has supported these requirements. In addition, Title 17 has for many years required the Sacramento Valley Basinwide Air Pollution Control Council (BCC) and its technical Advisory Committee (TAC) to prepare an Annual Agricultural Burning Plan for agricultural operations burning, i.e. burning by growers and raisers of livestock, in the basin. Recent revisions to Title 17 require all California districts to prepare an SMP, for both agricultural operations and prescribed burning, by July 1, 2001. In the case of the Sacramento Basin, this SMP replaces the Annual Agricultural Burn Plan. The current Agricultural Burn Plan has been renamed to the Smoke Management Program. The SMP continues to place responsibility and authority on local air districts for implementation. [2][3] The CHSC provides that ARB shall designate no-burn days. [1] During the intensive fall burn season, the SMP provides that the Basin Burn Coordinator will announce the basin burn day decisions. [3] The SMAQMD may declare no-burn days even when ARB does not, when the SMAQMD forecasts an exceedance of an air quality standard. [4] In addition, local fire jurisdictions may, through their own authority, declare no-burn days superceding any decision made by either the ARB or the SMAQMD. [7]
3. Please describe the SMP. What are the requirements and general practices (voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	The purpose of the Plan is to describe the policies and procedures used with hourly and daily measurements of air quality and meteorology to determine how much agricultural burning can be allowed in the Sacramento Valley Air Basin. [3] Its main goal is to allow agricultural burning to take place in a manner that minimizes smoke impacts. It does this by providing guidance to districts for the timing and placing of burns, by setting the types of burn days, and by allocating no more burn acreage than the air is expected to adequately disperse. The dispersal ability is based primarily on atmospheric stability and winds. However, many other air quality and meteorological factors are taken into consideration as documented in the SMP. Beginning July 1, 2001 the SMP will include provisions for prescribed burning in the air basin. The SMAQMD s rules and regulations currently contain provisions in support of this. The SMAQMD s Rule 501 supports compliance with the CCR and the CHSC in terms of permitting and other specific requirements. [1][2][4]
4. How is information on the SMP or other requirements disseminated to burners?	In addition to the annual SMP public workshop and hearing process, the SMP provides for an annual educational and informational meeting for growers, which covers the burning program policies and procedures. [3] In addition, the Agricultural Commissioner contacts each grower through the permitting process. The permits to burn contain specific requirements for the permittee to contact the issuing authority prior to ignition. In this way, contact is maintained throughout the burn year. Permittees are also included in various mailings and publications from the SMAQMD such as the newsletter and an agricultural burning brochure. The SMAQMD website is

Smoke Management Program Component	Sacramento Metro Air Quality Management District California
	available to growers for general information and the Sacramento Valley Agricultural Burn Decisions web page is available to burners. However, real time information to individual growers is not provided in this manner. The SMAQMD requires permittees to obtain authorization before burning a specific site at a specific time of day. [7]
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	See Question 4 above. [7]
6. How is the program funded?	The SMAQMD imposes burn permit fees, which cover approximately thirty percent of the field elements of the program. [5] Permit fees include a $50 base fee and an acreage fee based upon the type of material. Orchard or vineyard pruning waste is $0.50 per acre. Orchard removal waste is $3.50 per acre. All other burnable waste, including field stubble and weeds, is charged at $1.75 per acre. The remainder of the program is funded through State subvention funding. [7]
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	The current SMP also provides that if the SMAQMD forecasts a Spare The Air Day (based upon the EPA Air Quality Index for the Federal 8-hour ambient standard for ozone), the SMAQMD will notify adjacent air districts. These adjacent air districts are those within the Sacramento Federal Ozone Nonattainment Area. The SMP further requires these districts to declare no burning in specified adjacent zones for the day(s) of the forecast. The SMAQMD also notifies the ARB and the Basin Burn Coordinator. The SMP also contains a provision for districts to voluntarily declare no-burn days on days forecast to exceed the ozone standard in Shasta County. [3] As mentioned above, the SMAQMD is a participant in the basin SMP, which requires communication among member districts. SMP participants also include certain local agricultural departments, fire districts, the ARB Meteorology and Compliance Program Review staff, Weather Network and the Basin Burn Coordinator. [3] As mentioned above, the SMP that will be adopted by July 1, 2001 will include enhanced prescribe burn elements that will further address coordination issues. Current SMP provisions require districts to notify adjacent districts whenever a considerable number of acres to be burned are allocated to a zone contiguous to another district. [3] *Continued on next page*
7. Continued	In addition, the SMAQMD also meets, at least annually, with ARB staff, Bay Area and San Joaquin Unified air district representatives, and related Sacramento River delta fire officials and burners to discuss and reduce smoke transport issues from burning in the delta area. [7]
Emissions	

Smoke Management Program Component	Sacramento Metro Air Quality Management District California
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	The SMAQMD maintains daily hard-copy records with burn specific information. The SMAQMD also maintains a tracking database. The emission inventory staff annually prepare an estimate based upon this information. The emissions information is provided annually to the ARB. Pursuant to the SMP, the basin burn coordinator maintains various burn statistics for each district and the basin. [7]
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard pruning, ditchbanks, CRP land, etc.)?	Data for the calendar year 1999 are shown below. Please note that the amounts burned can vary significantly from year to year depending upon air quality, weather, and economic factors. [7] Alfalfa 3.00; Almond 6.50; Apple 0.50; Cherry 2.50; Corn 1993.00; Ditchbanks 158.00; Grape 46.00; Grass 31.00; Olive 2.00; Orchard Removal 4.00; Other/Flood 7.00; Other Field 46.50; Other Prunings 91.00; Pears 174.15; Prune 0.50; Rice 4890.80; Safflower 113.00; Sorghum (Milo) 115.00; Sudan 1029.50; Walnut 2.00; Weeds 423.50; Wheat 447.00
10. What time of year is burning conducted for each major fuel type or crop?	The time of year varies from year to year depending upon burn day situations and economic factors. Growers prefer to burn rice in the fall, however regulatory requirements have limited fall rice burning moving more of that burning to the spring months. Future changes in the program will continue to restrict the overall amount of rice burning, but burn day patterns may allow much of that burning to take place in the fall, depending upon the weather. Wheat is typically burned in July and August. Corn and sudan tend to be burned in the fall and spring. The burning of other waste is scattered through out the year and highly dependent upon cultural and economic factors. [7]
11. What actions are required to minimize emissions from fire?	Permittees must ignite fires with an approved ignition device and as rapidly as practicable. Specific lighting techniques such as backfiring and stripfiring into the wind for certain field crops are intended to minimize particulate emissions. Waste must be physically arranged to burn with a minimum of smoke, minimum drying times must be adhered to or waste must pass the crackle test (a test to check the moisture content of rice straw) and materials must be reasonably free of excessive dirt, soil, and visible surface moisture. [2][3][4]
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	The SMP is the primary mechanism to restrict acreage on any given burn day, although the APCO may further restrict burning in general by declaring a no burn day as noted above. The SMAQMD, through the Agricultural

Smoke Management Program Component	Sacramento Metro Air Quality Management District California
	Commissioner, authorizes specific times and sites for burning on each burn day to protect downwind areas. · Acreage allocation decisions are made close to the actual burning times in order to improve forecast reliability and burning, meteorology, and air quality conditions are reviewed throughout the day. Maps are used to plot burns in relation to wind speed and direction and distance to downwind populated areas. [3] Permittees must adhere to ignition hours described in the SMP as specifically shown on their permits or as otherwise declared by the APCO. [3][4]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	The SMAQMD primarily relies upon the burn day decision made by the ARB pursuant to the SMP. Those decisions are based upon a wide array of meteorological and air quality data sets, including 1) atmospheric stability, inversion heights, and depth of the mixing layer; 2) wind speeds and direction (upper level and surface); 3) relative humidity; 4) baseline air quality Coefficient of Haze (COH), PM10, Bscat data and airport visibilities. Daily decisions on burning attempt to match the variable acreage amount with the meteorological dispersion capacity and considering the beginning baseline air quality level. During the fall burn season, meteorological information regarding current morning and forecast afternoon conditions are disseminated. The SMP also requires routine review of burning, meteorology, and air quality conditions throughout the day depending upon the circumstances. [3] During ozone season the SMAQMD relies, in addition, upon its ozone forecast to make burn decisions. The SMAQMD is exploring the feasibility of no-burn days based upon particulate matter forecasts. [7]
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	The Rice Straw Burning Reduction Act requires the phase-down of rice straw burning in the Sacramento Basin. The Act facilitates the exploration of alternatives to burning. California law also provides economic incentives for alternatives demonstration projects and tax relief for end users. ARB and CDFA administer these programs. [7]
15. Are the public notified of planned burning? If so, please describe how.	Effective 9-1-2000, for prescribed burning, the CCR requires procedures for public notification and education, including appropriate signage at burn sites, and for reporting of public smoke complaints. The SMAQMD has very little prescribed burning. These requirements, however, are now made part of the permittees Smoke Management Plan. (Note - this is not the SMP, but will become a program element of the SMP once finalized for the basin July 1, 2001.) The ARB provides burn day information to the public via the Internet; however, this is general information only. It is not an indication of whether or not individual fires have been authorized. The web pages also contain the names and phone numbers of the air quality districts in the Valley. [7]
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	Not applicable.

Smoke Management Program Component	Sacramento Metro Air Quality Management District California
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	Rule 501 enables the APCO to restrict burning or declare a no-burn day if burning will cause a violation of State or Federal ambient air quality standards including the State visibility standard. [4]. However, the SMAQMD does not contain any Class I areas. Under the SMP, FAA hourly airport visibility observations are factored into daily burn decisions. [7]
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	The SMAQMD has a board-approved Mutual Settlement Program (MSP) through which most violations are handled. If a case is deemed unsuitable for this MSP process, the APCO may refer the case as a criminal or civil matter. The vast majority of the SMAQMD s cases are handled through the MSP. The CHSC contains specific provisions criminal and civil violations of air pollution laws. A burn permit may be suspended or revoked pursuant to Rule 501. [4] The SMP strengthens enforcement of the agricultural burning program requirements through aerial and ground surveillance to ensure compliance. [3]
Public Education	
19. Are there any public educational programs in place? If so, please describe.	The annual revision to the SMP includes public workshops and hearings to solicit comments from interested persons and explain the program goals and requirements. [3] In addition, the SMAQMD maintains a broad-based outreach program, which includes aspects of agricultural, residential and fireplace burning. A brochure and web-based information discussing how to minimize wood smoke and explaining the negative health effects of wood smoke are available to the public. [7]
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	The Basin Burn Coordinator prepares an annual report for the fall burn season based upon air quality, meteorological and burn data. The data are collected and analyzed and form the bases of suggested program changes. The BCC reviews and annually amends the SMP as needed. All amendments are submitted to the ARB, which must concur with the amended SMP before it can become effective. Interested parties such as the affected industry and environmental groups also have opportunities to address the SMP and provide input. [3]
Further Information	
21. Referring to the document list at the beginning, please provide any missing	None.

Smoke Management Program Component	Sacramento Metro Air Quality Management District California
documents and/or the agency/person from whom the missing documents may be obtained.	
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Susan Engstrom, Sacramento Metro AQMD, 777 12th Street, 3rd Floor, Sacramento, CA 95814-1908, 916-874-4815, **sengstrom@airquality.org**. Karen Wilson, Sacramento Metro AQMD, 777 12th Street, 3rd Floor, Sacramento, CA 95814-1908.

Source of summary information:

[1] San Joaquin Valley United Air Pollution Control District Rule 4103, Open Burning, amended December 16, 1993.

[2] San Joaquin Valley United Air Pollution Control District Agricultural web page. Available at http://www.valleyair.org/ag/farmidx.htm.

[3] Ted Strauss, San Joaquin Valley United Air Pollution Control District; personal communication with Stephanie Walsh, EC/R Incorporated, on November 2, 2000, and comments dated December 12, 2000.

Special Note:

The San Joaquin Valley Unified Air Pollution Control District regulations for agricultural burning are in accord with the agricultural burning requirements mandated by the State of California. The State of California is currently revising the Agricultural Burning Guidelines in Title 17 of the California Code of Regulations. These changes will require the CA Air Quality Management Districts to revise their local regulations.

This survey was reviewed by the San Joaquin Valley United Air Pollution Control District. For more information, contact Ted Strauss, SJVUAPCD,1990 E. Gettysburg Ave., Fresno, CA, 93726-0244.

Smoke Management Program Component	San Joaquin Valley United Air Pollution Control District (District) California
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	Yes, all agricultural burning requires a valid permit issued by the San Joaquin Valley United Air Pollution Control District (District) and/or the designated agency having jurisdiction in the area where the agricultural burning will take place. [1]
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	Currently there is no SMP. However, the District does have smoke management requirements for all agricultural burners (see questions 11 and 12). [1] The new changes to the State rule will require all districts to develop SMPs. [3] The District makes the burn/no burn decision in consultation with the California Air Resources Board. [3]

Smoke Management Program Component	San Joaquin Valley United Air Pollution Control District (District) California
3. Please describe the SMP. What are the requirements and general practices (voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	Agricultural burners must obtain a burn permit. Applications for burn permits are processed over the telephone by calling the county where the burn is planned. Burners must supply their name, address, phone number, location of the burn site, total acreage of the parcel at the location, materials to be burned, and any other information to determine permit eligibility. When the application is approved the burn permit is mailed. Burners are responsible for complying with all conditions in the burn permit. [2] Prior to ignition, burners with valid permits are required to call the District to obtain burn day information, report the burn, and provide information such as permit number, name and phone number of the burner, burn location, material and amount to be burned, and start time of the burn. [2]
4. How is information on the SMP or other requirements disseminated to burners?	District open burning rules are available on the Internet. [1] The District maintains an agricultural burning web page. [2] Conditions are specified on an agricultural burn permit issued to the burner. [3]
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	Not necessary for agricultural burning; however, training is provided to violators of the District s open burn rule as a part of their settlements. [3]
6. How is the program funded?	Anyone obtaining an burn permit is subject to fees as follows: single location - $22; two locations - $38; three or more locations $62; burn day exemption permit - $30 per location (daily). [2]
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	There is some coordination. The new changes in the State rule require more coordination between districts. [3]
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	Prior to ignition, burners with valid permits are required to call the District to obtain burn day information, report the burn, and provide information such as permit number, name and phone number of the burner, burn location, material and amount to be burned, and start time of the burn. [2]
9. If available, please list the annual number of acres burned for each major	1998 Agricultural Burning Acreage (only those crops with over 5,000 acres burned are listed): [3] Crop Acreage Crop Acreage

Smoke Management Program Component	San Joaquin Valley United Air Pollution Control District (District)			
	California			
fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	Almond	252,702	Other prunings	7,843
	Apple	5,422	Alfalfa	9,705
	Cherry	6,501	Barley	7,839
	Citrus	11,870	Corn	5,133
	Fig	7,538	Rice	17,919
	Grape	17,009	Wheat	31,586
	Peach	11,815	Ditchbank & canal	19,773
	Pistachio	19,705	Noxious weeds	9,820
	Plum	8,272	Tumbleweeds	58,706
	Prune	5,126	Grape stumps/stakes	56,612
	Raisin trays	65,631	Other crops	46,029
	Walnut	62,538	TOTAL	745,094
10. What time of year is burning conducted for each major fuel type or crop?	Approximately half the agricultural burning takes place in the Fall, one quarter in the Spring, and the rest in the Summer and Winter. [3]			
11. What actions are required to minimize emissions from fire?	For agricultural burning: stacked materials must be loosely stacked in a manner to promote drying and insure combustion with a minimum of smoke; approved ignition devices must be used; materials must be free of excessive dirt, soil and visible surface moisture; burners must follow minium drying time periods for various crop wastes. [1] For field crop burning: no burning is allowed before 10 am or after 5 pm; rice, barley, oat, and wheat straw must be ignited by strip firing into the wind or by backfiring except under special permit or where crops do not lend themselves to these techniques; rice straw must be dried 3-10 days prior to ignition and pass the crackle test. [1]			
Smoke Management				
12. What actions are required to prevent or mitigate smoke impacts?	A fire safety zone away from homes, shops, garages, and other buildings or equipment should surround the burn areas. [2] Some burn permits may stipulate more stringent conditions depending on the location of the burn, the types of materials to be burned, and the proximity of sensitive receptors. [3]			
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon	Permits are not valid for any day during a period in which agricultural burning is prohibited by the California Air Resources Board (ARB), the District or the designated agency having jurisdiction over the burn site. [1] The air pollution control officer (APCO) may restrict agricultural burning on permissive burn days if			

Smoke Management Program Component	San Joaquin Valley United Air Pollution Control District (District) California
launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	meteorological conditions and the total tonnage to be ignited would allow the volume of smoke and other contaminants to cause a public nuisance or create or contribute to an exceedance of an ambient air quality standard. [1] Burning may not be authorized when the downwind metropolitan areas are predicted to exceed the ambient air quality standards. [1]
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	The District is involved with many farming groups; staff members give talks and encourage farmers to use alternatives. [3] The District received a five million dollar grant over three years to pay biomass plants to burn more agricultural waste. Currently such plants are required to burn some agricultural waste in their permit. The purpose of the grant is to increase how much agricultural waste is burned. [3]
15. Are the public notified of planned burning? If so, please describe how.	No. Burners are required to notify the District, and the District then notifies the local fire agencies. [3]
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	The regulations are not voluntary.
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	No. The rules were developed as particulate matter and ozone control measures. [3]
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	The permit holder is responsible for the control of all agricultural fires. If a fire should escape control, the responsible party may be found negligent and held liable for all fire suppression costs. In addition, the responsible party may be held accountable for any civil penalties to other property that is burned or damaged. [2] Anyone found burning materials in violation of District Rule 4103 is subject to penalties. [3]
Public Education	
19. Are there any public educational	The District is involved with many farming groups and staff members often give talks on agricultural burning

Smoke Management Program Component	San Joaquin Valley United Air Pollution Control District (District) California
programs in place? If so, please describe.	issues. [3] The California Air Resources Board developed a public education booklet on Agricultural Burning, written in both English and Spanish. [3]
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	The District is developing a periodic review process. [3]
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	The District is currently revising Rule 4103- Open Burning. The draft rule is available on the website at www.valleyair.org. For more information ,please contact Joan Merchen at (559) 230-5800.
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Ted Strauss, San Joaquin Valley United Air Pollution Control District, (559) 230-5967, **ted.strauss@valleyair.org**. Jose Martinez, San Joaquin Valley Unified Air Pollution Control District, (559) 230-5975, jose.martinez@valleyair.org.

Source of summary information:

[1] South Coast Air Quality Management District (SCAQMD) Rule 444, Open Fires.
[2] SCAQMD Rule 208, Permit for Open Burning.
[3] SCAQMD Rule 102, Definition of Terms.
[4] SCAQMD Open Burning Policy Fact Sheet. Available at **http://www.aqmd.gov/news/burnfct.html.**
[5] Gilbert Vita, SCAQMD; personal communication with Barbara Bauer, EC/R Incorporated, on June 2, 2000.
[6] Gilbert Vita, SCAQMD; personal communication with Stephanie Walsh, EC/R Incorporated, on October 27, 2000, and comments received February 15, 2001.

Special Note:

The South Coast Air Quality Management District regulations for agricultural burning are in accord with the agricultural burning requirements mandated by the State of California. The State of California is currently revising the Agricultural Burning Guidelines in Title 17 of the California Code of Regulations. These changes will require the CA Air Quality Management Districts to revise their local regulations.

This survey was reviewed by the South Coast Air Quality Management District. For more information, contact Gilbert Vita, SCAQMD, 21865 E. Copley Drive, Diamond Bar, CA, 91765-4182.

Smoke Management Program Component	South Coast Air Quality Management District California
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	Yes, allowable open burning within the South Coast Air Quality Management District (District) requires a written permit from the Executive Officer or Designee of the District and, if necessary, from the local fire protection agency. [1][2] Allowable open burning includes agricultural burning (defined as open outdoor fires used in agricultural operations in the growing of crops, raising of fowl or animals or forest management, range improvement, or the improvement of land for wildlife and game habitat or disease and pest prevention. Agricultural burning also includes open outdoor fires used in the operation or maintenance of a system for the delivery of water.) and burning of dry cotton gin waste infected with an agricultural pest hazardous to nearby agricultural operations. [1] [3]
2. Do you have a smoke management	Neither the Rules nor the fact sheet specifically discuss a smoke management program; however, burners must

Smoke Management Program Component	South Coast Air Quality Management District California
program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	comply with the District Rules. The District Meteorologist makes the burn/no burn decision. The District monitors weather conditions and air quality to forecast when burning will be safe. Burn/no burn days are based on meteorological conditions and the likelihood of a smog episode. [4][5]
3. Please describe the SMP. What are the requirements and general practices (voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	Neither the rules not the fact sheet specifically discuss a smoke management program; however, burners must obtain a permit from the District and, if needed, from the local fire protection agency. [1][4]
4. How is information on the SMP or other requirements disseminated to burners?	District Rules 102, 208 and 444 and the District s open burning policy is available via the Internet. For each geographic area, the District determines meteorological conditions which will cause open burning to have an adverse effect on the ambient air quality in that areas. A list of the geographical areas and specific meteorological conditions for each areas is maintained at the District Headquarters and is available to the public. [1]
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	No. [6]
6. How is the program funded?	General appropriations; there are no permit or inspection fees. [6]
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	Agricultural burning is coordinated with the local fire departments in the four counties within the District and with the CA Department of Forestry; both also issue permits and conduct inspections. [6]
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	Permit information is summarized in an annual report submitted to the CA Air Resources Board. [6]
9. If available, please list the annual	Information is available upon formal written request to SCAQMD s Public Information office. [6]

Smoke Management Program Component	South Coast Air Quality Management District California
number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	
10. What time of year is burning conducted for each major fuel type or crop?	Agricultural burning is conducted at any time of the year for each major fuel type or crop. [6]
11. What actions are required to minimize emissions from fire?	Applicants are screened to ensure that they qualify as agricultural operations. Once they qualify, the number of acres they can burn is not limited, provided all other permit conditions are met. [6] The permittee must call each day to receive permission to burn. The District issues a control number to burners and tracks the numbers of acres authorized for burning each day and the location of that acreage. [6]
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	The District monitors weather conditions daily. [6] The permittee must call each day to receive permission to burn. The District issues a control number to burners and tracks the numbers of acres authorized for burning each day and the location of that acreage. [6]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	The District monitors weather conditions and air quality to forecast when burning will be safe. Burn/no burn days are based on meteorological conditions and the likelihood of a smog episode. No burn days usually occur in the summer when heat, dry conditions, winds or smog would make it unsafe and unhealthy to burn. As air pollution has decreased, the number of no burn days has declined accordingly. In 1993, a total of 58 days were designated as no burn days with five occurring during November during the week long series of Southland fires. [4] For each geographic areas, the District determines meteorological conditions which will cause open burning to have an adverse effect on the ambient air quality in that areas. A list of the geographical areas and specific meteorological conditions for each areas is maintained at the District Headquarters and is available to the public. [1]
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	Alternatives to open burning include hauling the debris to a landfill dump site or chipping and shredding. [4]
15. Are the public notified of planned burning? If so, please describe how.	The public is not required to be notified for agricultural burning, but must be notified for prescribed burning. [6]

Smoke Management Program Component	South Coast Air Quality Management District California
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	Not applicable.
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	No. [6]
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	Burning without a permit, violating the provisions of a burning permit, and creating a nuisance can result in violations and fines being issued. [6]
Public Education	
19. Are there any public educational programs in place? If so, please describe.	No, not at this time. However, once the rule is amended, it is likely there will be workshops to explain the changes to the public. [6]
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	No, not at this time. [6]
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	None

Smoke Management Program Component	South Coast Air Quality Management District
	California
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Gilbert Vita, SCAQMD, (909) 396-3403, **gvita@aqmd.gov** George Wright, SCAQMD, (909) 396-3005, **gwright@aqmd.gov** Joe Cassmassi, SCAQMD, (909) 396-3155, **jcassmassi@aqmd.gov**

Source of summary information:

[1] Colorado Revised Statutes, Chapter 25, Health, Section 7, Air Quality Control Program.

[2] Coleen Campbell, CO Dept. of Public Health & the Environment; comments received February 1, 2001.

Special Note:

This survey was reviewed by the CO Dept. of Public Health & the Environment. For more information, contact Coleen Campbell, CO DPHE, 4300 Cherry Creek Dr. South, APCD-B1, Denver, CO, 80246.

Smoke Management Program Component	State
	Colorado
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	The state of Colorado exempts all agricultural burning activities. [1]
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	No.
3. Please describe the SMP. What are the requirements and general practices (voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	Not applicable.
4. How is information on the SMP or other requirements disseminated to burners?	Not applicable.

Smoke Management Program Component	State
	Colorado
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	No.
6. How is the program funded?	Not applicable.
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	No.
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	This information is not collected by the state.
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	This information is not collected by the state.
10. What time of year is burning conducted for each major fuel type or crop?	This information is not collected by the state. The best estimate is spring irrigation ditch burns. [2]
11. What actions are required to minimize emissions from fire?	None.
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	None.

Smoke Management Program Component	State
	Colorado
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	From March to October, the Colorado Air Pollution Control Division or local health departments evaluate dispersion potential and determine whether open burning is allowed in various counties across the state. Denver, Boulder, Arapahoe, Douglas, Jefferson, Adams, Mesa, Delta, and Montrose counties are among the areas where dispersion conditions are issued. Voluntary compliance by agricultural burners is requested, but compliance is not tracked. Airshed capacity is not known. [2]
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	No.
15. Are the public notified of planned burning? If so, please describe how.	There are no public notification requirements for agricultural burns at the state level. [2]
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	Not applicable.
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	Not at this time. [2]
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	Not applicable.
Public Education	
19. Are there any public educational	An educational brochure was developed with a grant. The brochure is distributed in Mesa, Delta and Montrose

Smoke Management Program Component	State
	Colorado
programs in place? If so, please describe.	counties. [2]
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	Not applicable.
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	None.
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Coleen Campbell, CO Department of Public Health and the Environment, (303) 692-3224, **rccampbe@smtpgate.dphe.state.co.us**. Phyllis Woodford, CO Department of Public Health and the Environment, phone (303) 692-3221, fax (303) 782-0278, **phyllis.woodford@state.co.us**.

Source of summary information:

[1] 2000 Florida s Forest Fire Laws and Open Burning Regulations [Florida Administrative Code (Excerpted)], Chapter 590 Forest Protection, Chapter 823 Public Nuisance, Chapter 877 Miscellaneous Crimes, Chapter 403 Environmental Control, Chapter 5I-2 Open Burning Rule, and Chapter 62-256 Open Burning and Frost Protection Fires, **http://fire.r9.fws.gov/ifcc/smoke/State%20Regs/Florida.html**.

[2] Personal communication between K. Woodard, EPA/OAQPS and J. Brenner, Florida DOACS.

[3] Comments received from Florida Department of Agriculture & Consumer Services, Division of Forestry, Forest Protection Bureau dated August 24, 1999.

[4] Comments received from Florida Department of Agriculture & Consumer Services, Division of Forestry, dated October 4, 2000.

[5] University of Florida, Cooperative Extension Service, Prescribed Burning Regulations in Florida, **http://edis.ifas.ufl.edu/**.

[6] Jim Brenner, Florida Department of Agriculture & Consumer Services, Division of Forestry; personal communication with Stephanie Walsh, EC/R Incorporated, October 27, 2000, and comments received February 13, 2001.

[7] FL Division of Forestry, Forest Protection Bureau website, **http://flame.fl-dof.com/**.

Special Note:

This survey was reviewed by the FL Department of Agriculture & Consumer Services, Division of Forestry. For more information, contact Jim Brenner, Division of Forestry, Fire Management, 3125 Conner Boulevard, Tallahassee, FL, 32399.

Smoke Management Program Component	State
	Florida
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.).	The FL State Department of Agriculture (ISDA), Division of Forestry (DOF) oversees and authorizes general open burning (for agricultural, silvicultural, and rural landscaping purposes) and open burning for Certified Prescribed Burn Managers (for silvicultural, wildlife management, ecological maintenance and restoration, and range management purposes). [1]

Smoke Management Program Component	State
	Florida
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	There is no SMP, but there are provisions in the enabling legislation to reduce smoke and smoke impacts. DOF oversees and authorizes general open burning (for agricultural, silvicultural, and rural landscaping purposes) and open burning for Certified Prescribed Burn Managers (for silvicultural, wildlife management, ecological maintenance and restoration, and range & pasture management purposes). All burns do not have to be conducted under the Certification program. [1][4] Local legislation (city or county) can be more restrictive than state and federal rules, but not in conflict with them. For example, a burner is required to obtain a permit from the DOF to be legal for any prescribed fire or open burning. However, a burner may also be required to obtain a permit from his or her local governing authority to be compliant with local ordinances. [5]
3. Please describe the SMP. What are the requirements and general practices (voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	For open burning in general, authorization must be received from the DOF prior to igniting the burn on the day that the burn is to take place, or after 4 p.m. of the previous evening. [1] Daytime authorizations are from 9:00 a.m. to one hour before sunset for non-certified (agricultural) burners. Nighttime authorizations are issued for one hour before sunset to 9:00 a.m. the following day provided that the burn does not create a problem. Provided that the dispersion index is above 8 for non-certified burners and above 6 for certified burners. [4][5][6] The burn may not leave the authorized area. The burner s property is not necessarily the authorized area. For example, if the burner gets an authorization for 50 acres and burns 500, he/she is in violation regardless of whether the burn left his/her property. [4] The legislation allows the use of open burning and outdoor heating devices to prevent damage to agricultural products from cold and frost in a manner which provides the maximum protection to the quality of the ambient air in FL. The legislation attempts to minimize air pollution by restricting the use of open fires and outdoor heating devices to times and temperatures when absolutely necessary to prevent cold damage. [1]
4. How is information on the SMP or other requirements disseminated to burners?	The DOF provides information on burning regulations on their website, and publishes two informational pamphlets: *Know the Law Before You Strike That Match in a Rural County*, and *Know the Law Before You Strike That Match in a Non-Rural County*. The DOF also publishes the open burning rules and regulations brochure that covers all the open burning rules - agricultural burning, silviculture, land clearing (rural and non-rural) and yard trash. [5][6]
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	There is extensive training available. The DOF has a week long course on silverculture and agricultural burning called the Inter-Agency Basic Prescribed Fire Course that is used by other states; the DOD also sends staff to it on a frequent basis. This course was established in January 1989. The DOF teaches 5-7 sessions each year and they are always full. There is also a correspondence course through the Hillsborough Community College twice a

Smoke Management Program Component	State
	Florida
	year, once in the fall and once in the spring. [6]
6. How is the program funded?	The program is funded by the state s general revenue program; Florida does not charge a fee for the authorization program. [3]
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	The DOF coordinates with the Department of Environmental Protection (DEP) to prohibit open burning during an air stagnation advisory or a DEP air pollution episode. [1] The Commissioner of Agriculture may declare a drought emergency, then the Governor may issue a proclamation declaring a drought emergency and making open burning unlawful. [1][4] Agreements have been reached with Federal land management agencies and large private and commercial land owners on prescribed fire procedures. [2] DOF oversees and authorizes general open burning (for agricultural, silvicultural, and rural landscaping purposes) and open burning for Certified Prescribed Burn Managers (for silvicultural, wildlife management, ecological maintenance and restoration, and range management purposes). [1][4]
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	The DOF has information concerning fuel types and acres burned for each authorization. [3] The State is developing a new system to make burning data available on-line. Currently data for two Districts are available. The new system incorporates the use of a dispersion model on each burn before the authorization is issued to the burner. VSMOKE GIS is run based on output from a very sophisticated Weather Model (Mesoscale Model #5) developed by Penn State and NCAR. The information on both systems includes purpose of burn, size, location, start and stop times, person responsible, landowner information, and a comments section to deal with any particulars. Smoke Sensitive Receptors are logged in both systems to avoid issuing authorizations to landowners that will impact these areas - the new system does a better job of this than the old one. [6]
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	Data have only been compiled and posted on-line for Chipola county; the following data is for 1/1/99 through 1/1/00: [7] Material — Acres Grain post-harvest — 5,401 Pasture — 20,363 Piles — 33 Sugar cane — 217 On average, DOF has information for the following: [6] Silviculture — 1,200 authorizations — 1.5-1.8 million acres

Smoke Management Program Component	State
	Florida
	Agriculture 45,000 authorizations 1.3-1.6 million acres Land Clearning 72,000 authorizations 200-300 thousand acres
10. What time of year is burning conducted for each major fuel type or crop?	Sugar cane: October through March Silviculture: January through July (although burning is done at other times as well) Pasture/Range: January through March Wildlife: January through June [6]
11. What actions are required to minimize emissions from fire?	For pile or windrow burning in smoke sensitive areas, flames must be extinguished one hour before sunset. The amount of dirt in the piles or rows must be minimized to enhance combustion and reduce emissions. [1] Open burning in particulate and ozone nonattainment areas may be temporarily suspended if the DEP determines that ambient air concentrations of total suspended particulate or ozone may near or exceed the primary or secondary standards for these pollutants. [1] The open burning of certain materials, such as tires, asphalt, roofing material, and waste pesticide containers is prohibited. [1] The legislation allows the use of open burning and outdoor heating devices to prevent damage to agricultural products from cold and frost in a manner which provides the maximum protection to the quality of the ambient air in FL. The legislation minimizes air pollution by restricting the use of open fires and outdoor heating devices to times and temperatures when absolutely necessary to prevent cold damage. Only approved fuels may be used. [1] When burning for the purpose of land clearing: the size of piles is limited; the moisture content and composition of the material to be burned shall be favorable to good burning which will minimize air pollution - wet or green vegetative materials shall not be burned; the amount of dirt in a land clearing open burning operation shall be minimized; prior to open burning of a structure, excessive smoke producing or potentially air toxic material shall be removed; and excessive visible emissions are not allowed except for a period of up to 30 minutes during startups and shutdowns. [1]
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	For pile or windrow burning in smoke sensitive areas, flames must be extinguished one hour before sunset. The amount of dirt in the piles or rows must be minimized to enhance combustion and reduce emissions. Pile/windrow burning must be set back 300 feet from any occupied building and 100 feet from any road, except the landowner s buildings. [1] No open burning may be conducted during a National Weather Service Air Stagnation Advisory, a DEP Air Stagnation Advisory, an Air Pollution Episode, or if the DOF determines that weather conditions are unfavorable

Smoke Management Program Component	State
	Florida
	for safe burning. [1] *Continued on next page*
12. Continued	The following types of open burning are not allowed in Florida: open burning that reduces visibility at a public airport; open burning which reduces visibility on public roadways to less than 1000 feet unless the regulating authorities have given their permission to control traffic; and burning in smoke sensitive areas (as defined by the DOF) between one hour before sunset and 9:00 a.m. the next day. [1] The DOF won t issue authorization if sensitive areas are likely to be impacted. The DOF will suspend any open burning authorization and require burns in progress to be extinguished whenever atmospheric or meteorological conditions indicate improper dispersion of pollutants, or when DEP determines that ambient air concentrations of total suspended particulate or ozone may near or exceed the primary or secondary standards for these pollutants in particulate and ozone nonattainment areas. Any burn in progress will be allotted two hours to reduce emission to a level that no longer threatens public health or safety. [1][2] When burning for the purpose of land clearing, setback requirements must be met, and if the burn is creating a nuisance or if changing weather or atmospheric conditions create a real or potential fire safety or air pollution problem, the DEP may suspend or defer open burning until conditions change. [1]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	The DOF will suspend any open burning authorization and require burns in progress to be extinguished whenever atmospheric or meteorological conditions indicate improper dispersion of pollutants. [2] The DOF employs a meteorologist (numerical modeler) to run the Mesoscale Model #5 so that they will have the most accurate information regarding weather in the state. This information is incorporated into the dispersion model when authorizations are issued using the new system (projected to be state-wide by the end of 2001). [6]
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	The regulations do not discuss alternatives to fire as a land management tool or reductions in emissions. [1]
15. Are the public notified of planned burning? If so, please describe how.	DOF policy is to notify the public of planned prescribed burns, but notification is not required by statute. [2] Notification is required when conducting burns under FS 590.125(4); this is when DOF conducts burns for hazard mitigation. Public relation contacts are strongly recommended in all of the training that is conducted by the

Smoke Management Program Component	State
	Florida
	DOF and other land management agencies. [6]
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	All land owners must get authorization to conduct prescribed burns. Non-certified (agricultural) burners must maintain control of their fire and smoke impacts, and are liable for the impacts that result from the fire. In short, DOF is doing the smoke screening for the burner, and DEP monitors the air quality for DOF. [2][4][6]
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	Open burning in particulate and ozone nonattainment areas may be temporarily suspended when the DEP determines that ambient air concentrations of total suspended particulate or ozone may near or exceed the primary or secondary standards for these pollutants. There are no ozone non-attainment areas in Florida at this time. [1][6] The following types of open burning are not allowed in Florida: open burning that reduces visibility at a public airport; open burning which reduces visibility on public roadways to less than 1000 feet unless the regulating authorities have given their permission to control traffic; and burning in smoke sensitive areas between one hour before sunset and 9:00 a.m. the next day. [1]
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	Any person violating any of the provision of the State regulations is liable for all damages caused by the violation. Anyone who willfully or intentionally violates the State regulations are subject to felony punishment. Anyone who recklessly violates the State regulations are subject to misdemeanor punishment. Anyone who causes unauthorized fire or lets a fire escape is liable for the payment of all reasonable costs and expenses incurred while suppressing the fire. [1] An administrative fine, not to exceed $1,000 may be imposed. [1] The DOF has enforcement personnel to respond to complaints and issue notices of violations when appropriate. [2] The Department of Agriculture has an Office of Ag Law that enforces the open burning rules and regulations; it investigates suspicious fires and has full arrest powers in Florida. [6]
Public Education	
19. Are there any public educational programs in place? If so, please describe.	The DOF provides information on burning regulations on their website, and publishes two informational pamphlets: *Know the Law Before You Strike That Match in a Rural County*, and *Know the Law Before You Strike That Match in a Non-Rural County*. The DOF also publishes the brochure that deals with all open burning in Florida, titled, Florida s Open Burning Rules and Regulations. [5][6] The Department of Education must incorporate, where feasible and appropriate, the issues of prescribed burning into its educational materials. [1]

Smoke Management Program Component	State
	Florida
	The role of fire in Florida ecosystems is taught in schools, and the DOF has educational materials on the Internet. [2]
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	The regulations do not include provision to periodically review program effectiveness. [1] Florida laws are routinely reviewed as issues are raised by the public and regulated community. The regulations are reviewed based on issues raised by the public and regulated community. [2]
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	None
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Mr. Jim Brenner, FL Division of Forestry - Fire Management, (850) 488-6480, **brennej@doacs.state.fl.us** Mr. Larry George, Department of Environmental Protection, (850) 488-1344.

Source of summary information:

[1] Metro-Dade Fire Department, Policy and Procedure Manual, Volume 11, Chapter D, Subject 5, Open burning/bonfires regulations and operating procedures, September 28, 1998.

[2] Ray Gordon, FL Department of Environmental Resources Management; personal communication with Stephanie Walsh, EC/R Incorporated, on November 1, 2000.

[3] Captain Brinson, Miami-Dade Fire Rescue Department; personal communication with Stephanie Walsh, EC/R Incorporated, on November 9, 2000.

[4] Inspector Don Stringer, Miami-Dade Fire Rescue Department; personal communication with Stephanie Walsh, EC/R Incorporated, on November 13, 2000, and comments dated November 16, 2000.

Special Note:

This survey was reviewed by the Miami-Dade Fire Rescue Department. For more information, contact Inspector Don Stringer, Miami/Dade Fire Rescue Department, 20505 S. Dixie Highway, Cutler Ridge Mall, Suite 1293, Miami, FL, 33189.

Smoke Management Program Component	Metropolitan Dade County Florida
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	Open burning, including agricultural burning, is regulated by the Metro-Dade Fire Department (MDFD). [1]
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	There is no SMP for agricultural burning. Those who want to conduct agricultural burning must apply for a permit. The MDFD will inspect their site before issuing the permit and may include site-specific requirements in the permit. Individuals with a burning permit must call the MDFD on the days they want to burn to obtain permission. The MDFD makes the burn/no burn decision based on wind speed. [4]
3. Please describe the SMP. What are the requirements and general practices	A permit is required for all open burning. The applicant must provide a complete business mailing address and burn site address. Approval of the permit will not be granted if plastics or other material (tires, garbage, trash, etc.)

Smoke Management Program Component	Metropolitan Dade County Florida
(voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	are mixed with vegetation to be burned. All applicants must sign an affidavit prior to the Fire Prevention Division inspection stating that all policy requirements have been met. All fees must be paid before a permit can be issued. [1] Those who want to conduct agricultural burning must apply for a 30-day permit (primarily for land clearing) or an annual permit (primarily for burning polyethylene mulch plastic). [4] The permittee must call the Fire Communications Office after 9:00 a.m. each day that burning is planned to obtain permission to burn for that day. Open burning will be ignited after 9:00 am and will be completely extinguished one hour before sunset (except frost protection fires). Permitted burning is for daytime only; nighttime burn requests must be approved by the Fire Prevention Division. [1] Permits are not required for open burning or the use of heating devices for frost or cold protection in connection with agricultural operations. [1] The permittee will take all reasonable precautions to control excessive visible emissions and odors from an open burn so as not to create a public nuisance. [1] Size restrictions and number of piles to be burned will be determined by the Fire Prevention Division. [1] Agricultural burning of vegetative material that has not been placed in piles must occur 300' or more from occupied buildings and 100' or more from public roads. Burning will only take place when wind direction will not adversely affect visibility on roads or downwind occupancies. [1] Polyethylene black mulch plastic burning is subject to the following regulations: piles must be 300' or more away from any occupied buildings and 100' or more from public roads; burning will take place only when wind direction will not adversely affect visibility on roadways or downwind occupancies; vegetation will be cleared around piles prior to burning; pile size will be limited to no more than 5' x 5' x 5' high and spaced at least 25' apart; and the mulch will not be mixed with other combustibles such as tires, trash, building materials, vegetative waste, etc. [1]
4. How is information on the SMP or other requirements disseminated to burners?	Burning requirements are in the application and permit. [1]
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	The Department of Environmental Resources Management does not provide burner training. However, burners are required to have training. [2] The MDFD does not provide burner training, but the inspector will give guidance to the prospective burner when inspecting the site. [4]
6. How is the program funded?	The program is funded by permit fees. [4]

Smoke Management Program Component	Metropolitan Dade County Florida
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	The FL Division of Forestry (DOF) delegated regulation of agricultural burning to the MDFD. [4] The DOF is notified of any permit issued west of Krome Avenue. [1] The DOF oversees controlled burns and usually does not notify the MDFD. Likewise, the MDFD usually does not notify the DOF regarding agricultural burning. [4]
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	The MDFD keeps all burn permit information. Permits are issued on a per pile basis, not a per acre basis. [4]
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	In 1999, approximately 10,000 acres were burned for agriculture. The crops that were burned include tomato, okra, pole bean, and cane field. [3 - info from DOF] Farmers are not required to report the types of crops they burn. Primarily what farmers burn is polyethylene mulch in the field (June and July). Nurseries also burn trimmings from trees and shrubs (September and October). [4]
10. What time of year is burning conducted for each major fuel type or crop?	See Question #4 above.
11. What actions are required to minimize emissions from fire?	The permittee will take all reasonable precautions to control excessive visible emissions and odors from an open burn so as not to create a public nuisance. [1] Size restrictions and number of piles to be burned will be determined by the Fire Prevention Division. [1] When burning polyethylene black mulch plastic: vegetation must be cleared around piles prior to burning; pile size will be limited to no more than 5' x 5' x 5' high and spaced at least 25' apart; and the mulch will not be mixed with other combustibles such as tires, trash, building materials, vegetative waste, etc. [1]
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	The permittee will take all reasonable precautions to control excessive visible emissions and odors from an open burn so as not to create a public nuisance. [1] Agricultural burning of vegetative material that has not been placed in piles, and polyethylene black mulch plastic burning, must occur 300' or more from occupied buildings and 300' or more from public roads. Burning

Smoke Management Program Component	Metropolitan Dade County Florida
	will only take place when wind direction will not adversely affect visibility on roads or downwind occupancies. [1]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	Agricultural burning of vegetative material that has not been placed in piles, and polyethylene black mulch plastic burning, must occur 300' or more from occupied buildings and 100' or more from public roads. Burning will only take place when wind direction will not adversely affect visibility on roads or downwind occupancies. [1] Open burning will be ignited after 9:00 am and will be completely extinguished one hour before sunset (except frost protection fires). Permitted burning is for daytime only; nighttime burn requests must be approved by the Fire Prevention Division. [1]
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	There is no process to require alternatives to fire be considered. However, some farmers do use tractors with disc blades to work agricultural stubble back into the soil instead of burning it. [3] Grinding stubble and selling it for mulch is gaining some popularity. Grinding, as well as the use of air curtain burners (which burn more quickly and with less smoke than traditional burning) are encouraged but not required by the MDFD. [4]
15. Are the public notified of planned burning? If so, please describe how.	There is no public notification requirement, although some burners will notify neighbors out of courtesy. [4]
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	There is no SMP for agricultural burning.
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	Visibility is not a big issue in the area. Wind speed, direction, and exposures are the primary concerns. [4]
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	Pollution Control Officers and the Division of Forestry will inspect open burning by spot checking or upon request. If no permit has been issued, or burning is in violation of permit conditions, or a nuisance is created, they will request fire department assistance in extinguishment and enforcement actions. [1]

Smoke Management Program Component	Metropolitan Dade County Florida
	The Fire Inspector/Investigator is responsible for enforcement and has the authority to write citations under Section 8CC of the Code of Miami-Dade County. [1] The MDFD maintains records of who calls in each day to ask to burn. The Inspector visits these sites to ensure that the permit requirements are being followed and issues citations to violators. The fine for the first violation is $210. Fines increase for each subsequent violation, up to $1,000 per violation. [4]
Public Education	
19. Are there any public educational programs in place? If so, please describe.	No. [4]
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	There are no such provisions in place. However, the regulations have been changed significantly in the last three years to more effectively address illegal burning. Prior to the update, each fire house could issue permits; there was no coordination and a great deal of illegal burning of construction debris. Now all agricultural burning is coordinated through inspectors in the northern and southern halves of the county. [4]
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	None.
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Inspector Don Stringer, Miami-Dade Fire Rescue Department, (305) 971-8800. Ray Gordon, Miami-Dade Dept. of Environmental Resources Management, Miami, FL, (305) 372-6924. Captain Brinson, Miami-Dade Fire Rescue Department, (786) 331-4819.

Source of summary information:

[1] Hawaii Administrative Rules, 11-60.1: Open Burning, **http://www.state.hi.us/doh/rules/emd/11-60.PDF**.

[2] Hawaii Department of Health, Sample Agricultural Burning Permit

[3] WESTAR, Western States Agricultural Burning Survey, 1999.
[4] Susan Kihara, HI Department of Health, Clean Air Branch; personal communication with Stephanie Walsh, EC/R Incorporated, October 23, 2000.
[5] Lisa Young, HI Department of Health, Clean Air Branch; comments dated December 6, 2000.

Special Note:

This survey was reviewed by the Hawaii Department of Health. For more information, contact Lisa Young, HI DH, Clean Air Branch, P.O. Box 3378, Honolulu, HI, 96801.

Smoke Management Program Component	State
	Hawaii
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	Agricultural burning is regulated by the Hawaii Department of Health, Clean Air Branch open burning rules. [1]
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	Hawaii has an agricultural burning program and open burning rules. [5] The Hawaii Department of Health, Clean Air Branch has the authority to make no burn decisions. [5]
3. Please describe the SMP. What are the requirements and general practices (voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	No person engaged in any agricultural operation will cause or allow agricultural burning without first obtaining a permit from the Director of Health (Director). [1] Applications for agricultural burning permits must be made on forms specified by the Director and must be accompanied by two copies of complete data. [1] The information provided on each application must include a business license for commercial agricultural activities, maps of areas to be burned showing fields by appropriate numbers and acreage, direction of prevailing winds, location of residential, school, and commercial establishments, public buildings, airports, and public utilities, the designation of fields to be burned under specified wind conditions, alternate means of disposal of

Smoke Management Program Component	State
	Hawaii
	crops, and any other information that the Director may specify. [1] The permit may be granted for a period of up to one year from the date of approval. [1] In a district where a long-term no-burn declaration is in effect, the Director may provide an exemption during an agricultural no-burn period for the control of plant diseases or infestations when burning is determined to be the sole method of control. [1]
4. How is information on the SMP or other requirements disseminated to burners?	When burners come in to apply for a permit, they are informed of the open burning rules. After they apply, the DOH does an inspection to see if they qualify for a permit. If they receive a permit, the open burning rules are outlined in the permit itself. [4] The Director must act on an application within a reasonable time, but not to exceed ninety days from the day the complete application is received, and will notify the applicant in writing of the approval or denial of the application. If the Director has not acted on an application within the ninety day period, the application will be deemed to have been approved. [1] Notices of no-burn periods for the specified islands or districts will be provided by radio broadcast through the National Weather Service and will apply for a specified no-burn period. [1] The Small Business Assistance Office held a meeting with small farmers on the open burning rule and how it applies to them. [4]
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	No. [4]
6. How is the program funded?	The permitting program is funding by application and permit fees that vary depending on the amount of acreage to be burned. [4]
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	For the island of Oahu, the permittee must notify the Fire Alarm Bureau prior to each burn. [2] For Maui County, the permittee must notify the Police Central Dispatch and the nearest fire station prior to each burn. [2] For all other islands, the permittee must contact the nearest fire station prior to each burn. [2]
Emissions	
8. How is burning documented and tracked (crop type, location, individual	Each permittee must maintain a record of conditions existing at the time of each burn, including the location and identification of the burn area, size of the area, date, time of day, prevailing wind direction and speed, amount of

Smoke Management Program Component	State
	Hawaii
burn, by county, emissions, etc.)?	rainfall during the preceding twenty-four hours, type of material to be burned, and any other pertinent data required by the Director. [1]
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	Sugar cane: approximately 30,000 acres. [3]
10. What time of year is burning conducted for each major fuel type or crop?	Usually March through November. [3]
11. What actions are required to minimize emissions from fire?	A permittee must only burn in controllable amounts and under conditions that will minimize visible smoke from entering any residence, business, school, public road, highway, beach, or any area to which the public has unrestricted access. [2]
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	A permittee must only burn in controllable amounts and under conditions that will minimize visible smoke from entering any residence, business, school, public road, highway, beach, or any area to which the public has unrestricted access. [2] After a burn has begun, if visible smoke enters any residence, business, school, public road, highway, beach, or any area to which the public has unrestricted access, the permittee must take the best practical measures to eliminate such visible smoke, including the discontinuation of burn. [2] *Continued on next page*
12. Continued	When a no-burn period has been declared in a district and smoke from any adjacent district, as determined by the Director, may impact on the affected district, the no-burn period will apply to both districts. [1] Agricultural burning is not allowed on the island of Oahu when meteorological conditions have resulted in a rise of the carbon monoxide level exceeding 5 mg/m^3 for an eight-hour average or the PM_{10} level exceeding 150 $\mu g/m^3$ for twenty-four hours and when the National Weather Service predicts a continuation or deterioration of existing meteorological conditions. [1]
13. How is meteorology, time of day, and air quality monitoring (particulate	In recording the meteorological data required by each burning permittee, the permittee may use National Weather Service data or, at the permittee s discretion, the permittee may elect to monitor the conditions, provided that the

Smoke Management Program Component	State
	Hawaii
matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	instruments used have been approved by the Director. [1] Meteorological conditions are monitored each day to ensure there will be adequate smoke dispersal. If conditions are unfavorable, DOH can declare a no-burn day. Notices of no-burn periods for the specified islands or districts will be provided by radio broadcast through the National Weather Service and will apply for a specified no-burn period. [1] Agricultural burning is not allowed when meteorological conditions have resulted in widespread haze on any island or in any district on that island and where the National Weather Service or a meteorological service predicts a continuation of existing meteorological conditions. [1] Agricultural burning is not allowed on the island of Oahu when meteorological conditions have resulted in a rise of the carbon monoxide level exceeding 5 mg/m^3 for an eight-hour average or the PM_{10} level exceeding 150 $\mu g/m^3$ for twenty-four hours and when the National Weather Service predicts a continuation or deterioration of existing meteorological conditions. [1] Last year the DOH did a study on sugar cane burning (the primary crop that is burned) to determine the conditions most conducive to smoke dispersal. [4]
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	Applications for agricultural burning permits must include alternate means of disposal of crops. [1]
15. Are the public notified of planned burning? If so, please describe how.	No, although the burner must notify the local fire department and usually also notifies the DOH. [4] The sugar cane companies may notify the community or adjacent neighbors prior to burning. [5]
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	There is no SMP for agricultural burning.
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	Agricultural burning is not allowed when meteorological conditions have resulted in widespread haze on any island or in any district on that island and where the National Weather Service or a meteorological service predicts a continuation of existing meteorological conditions. [1] The rule states that widespread haze will be considered to exist when all visible ridges: A) within five to ten miles have a smoky or bluish appearance and colors are subdued; and B) beyond ten miles have a blurred appearance. [1] Verification that widespread haze exists in any district may be accomplished by consultation with personnel in the appropriate district fire or police stations. [1]

Smoke Management Program Component	State
	Hawaii
	On the Director s own motion or the application of any person, the Director may terminate, suspend, reopen, or amend a permit if, after affording the applicant a hearing, it is determined that the maintenance or attainment of NAAQS and state ambient air quality standards will be interfered with. [1]
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	Any person who fails to comply with the terms and conditions of the permit or the open burning rules will be subject to the penalties and remedies provided for in sections 342B-42, 342B-44, 342B-47, and 342B-48, HRS, including the invalidation of the permit. [1] Section 342B-47, HRS, maintains that any person who violates the open burning rules will be fined not more than $10,000 for each separate offense. Each day of each violation constitutes a separate offense. On the Director s own motion or the application of any person, the Director may terminate, suspend, reopen, or amend a permit if, after affording the applicant a hearing, it is determined that any condition of the permit has been violated, any provision of the open burning rules have been violated, or any provision of chapter 342B, HRS, has been violated. [1]
Public Education	
19. Are there any public educational programs in place? If so, please describe.	Recently the DOH developed a brochure on agricultural burning that was distributed in areas where people were burning without permits or were burning materials that are not allowed. The brochure outlined the open burning rules and explained that burning without a permit is a violation that can result in penalties. [4]
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	Last year the DOH did a study on sugar cane burning (the primary crop that is burned) to determine the conditions most conducive to smoke dispersal. [4] Meteorological conditions are monitored each day to ensure there will be adequate smoke dispersal. If conditions are unfavorable, DOH can declare a no-burn day. This measure helps prevent air quality problems. Otherwise, there are no formal provisions for reviewing program effectiveness. [4]
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person	None.

Smoke Management Program Component	State
	Hawaii
from whom the missing documents may be obtained.	
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Susan Kihara, Hawaii DOH, Clean Air Branch; (808) 586-4200. Lisa Young, Hawaii DOH, Clean Air Branch; (808) 586-4200.

Source of summary information:

[1] Idaho Statute, Title 22 Agriculture and Horticulture, Chapter 48 Smoke Management and Crop Residue Disposal, Sections 4801 - 4804, **http://www3.state.id.us/idstat/TOC/22048KTOC.html**.

[2] Idaho Agricultural Crop Residue Disposal Memorandum of Understanding dated December, 1998.

[3] Idaho State Department of Agriculture, Training Program Slide Presentation.

[4] WESTAR, Western States Agricultural Burning Survey, 1999.

[5] Diane Riley, ID Department of Environmental Quality; personal communication with S. Walsh, EC/R Incorporated, November 2, 2000 and comments dated December 21, 2000.

[6] Curt Thornburg, ID Dept of Agriculture; personal communication with S. Walsh, EC/R Incorporated, Nov 7, 2000.

[7] Idaho Administrative Code, 58.01.01, Air Pollution Control, Sections 600 through 616, *Rules for Control of Open Burning*. 1998. **http://www2.state.id.us/adm/adminrules/rules/IDAPA58/58INDEX.HTM**.

[8] Idaho Administrative Code, 58.01.10, Air Pollution Control, Sections 550 through 562, *Air Pollution Emergency Rule*. Amended April 5, 2000. **http://www2.state.id.us/adm/adminrules/rules/IDAPA58/58INDEX.HTM**.

Special Note:

This survey was reviewed by the Idaho Department of Environmental Quality. For more information, contact Diane Riley, ID DEQ, 1410 North Hilton Street, Boise, ID 83706-1255.

Smoke Management Program Component	State
	Idaho
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	The Idaho State Department of Agriculture (ISDA) is the lead agency in monitoring and enforcing agricultural regulations, and the director of the ISDA has the authority to regulate crop residue burning under the state statute (Title 22, 4801-4804). [1], [2] The Idaho Department of Environmental Quality (IDEQ) is the lead agency in protection of the state s air quality. IDEQ provides air quality information and technical assistance to ISDA. [2] During periods of atmospheric stagnation and/or degraded air quality, IDEQ can suspend all open burning. [8] The Agricultural Crop Residue Disposal MOU (CRD MOU) sets forth a working arrangement between the ISDA, IDEQ, and Idaho s major agricultural industry associations. [2]
2. Do you have a smoke management program (SMP) for agricultural burning?	The Idaho Legislature encourages the ISDA and the IDEQ to cooperate with the agricultural community and establish voluntary smoke management and crop residue burning programs. [1]

Smoke Management Program Component	State
	Idaho
If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	Idaho does not have a statewide smoke management plan for agricultural burning. However, the CRD MOU has voluntary smoke management guidelines (for the Kootenai and Benewah counties smoke management program in northern Idaho please see the following survey). [6] Individual burners make the burn/no-burn decision. The IDEQ open burning rule specifically allows orchard clipping and weed control fires. [7] During periods of atmospheric stagnation and/or degraded air quality, IDEQ can suspend all open burning. [8]
3. Please describe the SMP. What are the requirements and general practices (voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	The open burning of crop residue grown in agricultural fields is allowed when all rules are met, and when no other agricultural viable alternatives to burning are available, as determined by the ISDA director, for the purposes of: (a) disposing of crop residues; (b) developing physiological conditions conducive to increased crop yields; or (c) controlling diseases, insects, pests, or weed infestations. [1] The following provisions apply to all agricultural field burning: (a) any person conducting crop residue burning must make every reasonable effort to burn only when weather conditions are conducive to adequate smoke dispersion, and the burning does not emit particulates or other material which exceed the state and federal ambient air quality standards; and (b) the open burning of crop residue must be conducted in the field where it was generated. [1] Disposal of crop residue should be conducted under the following voluntary guidelines: (a) burning of residue should not be conducted unless adequate smoke dispersion is possible; (b) burning of residue should not be conducted on weekends or holidays; (c) burning of residue should not be conducted within fifty feet of any structure; (d) fire suppression equipment should be on site prior to any burning of residue; and (e) every effort should be made to notify neighbors and persons located near the burning site prior to burning taking place. [2]
4. How is information on the SMP or other requirements disseminated to burners?	IDEQ posts daily air quality and public health advisories for several areas on their website: **http://www2.state.id.us/deq/air/air1.htm**. The ISDA has developed a training program for burners on how to utilize fire as an effective tool in their best management practices. The training includes the following categories: Need for Air Pollution Reduction, Burning MOU, Agricultural Burning, What is Smoke?, How to Burn Clean, Residue Drying Times, Burning/Igniting Techniques, Burn/No-Burn Days, Other Considerations, Agricultural Burning Checklist, and Summary. [3] ISDA uses newsletters, correspondence, and flyers to disseminate information to burners. IDEQ includes information on the CRD MOU and training program in a brochure on open burning.
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	CRD MOU voluntary guidelines maintain that each person, which may include individuals, corporations, or partnerships, disposing of residue should attend a training seminar in proper disposal procedures prior to burning crop residue. [2]

Smoke Management Program Component	State
	Idaho
	The ISDA has developed a burner training program that includes the following categories: Need for Air Pollution Reduction, Burning MOU, Agricultural Burning, What is Smoke?, How to Burn Clean, Residue Drying Times, Burning/Igniting Techniques, Burn/No-Burn Days, Other Considerations, Agricultural Burning Checklist, and Summary. [3] The ISDA CRD training can be used for continuing education credits for the purpose of maintaining pesticide licenses. The ISDA also seeks out co-op counsels and industry groups and gives the training at their meetings. [6] The ISDA will maintain and make available to other participants in the CRD MOU, a list of people trained in proper methods of crop residue disposal through burning. [2]
6. How is the program funded?	Funding for the program comes from the administrative budgets of the IDEQ and ISDA. [5][6]
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	The CRD MOU sets forth a working arrangement between the ISDA, IDEQ, and industry groups consisting of the North Idaho Farmers Association, the Nez Perce Prairie Grass Growers Association, the Idaho Alfalfa Seed Growers Association, the Idaho Grain Producers Association, Idaho Mint Growers Association, and the Idaho Eastern Oregon Seed Association. [2] The CRD MOU allows the formation of regional advisory groups when more specific guidelines are needed to address any unique circumstances of the regions. There are currently two regional advisory groups being developed. [5]
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	The ISDA will prepare an annual report for dissemination to CRD MOU participants of the status of crop residue disposal monitoring, including summary reports of any investigations conducted. [2]
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	Grass seed and cereal grain fields are registered for the Kootenai and Benewah Counties smoke management program (see the Kootenai and Benewah Counties survey in this report). Data for other areas and other crops are not available. [5]
10. What time of year is burning conducted for each major fuel type or crop?	Grass seed and cereal grain crops are burned in the fall (August-September). Alfafa, mint, and other perineal forage crops are burned in the spring and fall. Ditchbank burning is conducted in the spring. [5]
11. What actions are required to	The CRD MOU and training program contain elements that address minimizing emissions (see answers to

Smoke Management Program Component	State
	Idaho
minimize emissions from fire?	questions 3 and 5). [5] Both ISDA and IDEQ have authority to determine alternatives to burning (see answers to questions 3 and 14). [5]
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	Any person conducting crop residue burning must make every reasonable effort to burn only when weather conditions are conducive to adequate smoke dispersion. [1] Disposal of crop residue should be conducted under the following voluntary guidelines: (a) burning of residue should not be conducted unless adequate smoke dispersion is possible; (b) burning of residue should not be conducted on weekends or holidays; (c) burning of residue should not be conducted within fifty feet of any structure; (d) fire suppression equipment should be on site prior to any burning of residue; and (e) every effort should be made to notify neighbors and persons located near the burning site prior to burning taking place. [2] During periods of atmospheric stagnation and/or degraded air quality, IDEQ can suspend all open burning. [8]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	Any person conducting crop residue burning must make every reasonable effort to burn only when weather conditions are conducive to adequate smoke dispersion, and the burning does not emit particulates or other material which exceed the state and federal ambient air quality standards. [1] The IDEQ will monitor air quality in each airshed, using existing monitoring, in cooperation with other participants in the CRD MOU. [2] IDEQ posts daily air quality and public health advisories for several areas on their website: **http://www2.state.id.us/deq/air/air1.htm**. During periods of atmospheric stagnation and/or degraded air quality, IDEQ can suspend all open burning. [8] The CRD MOU and training program address meteorology, timing, air quality, and cumulative burn activity. [5]
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	The open burning of crop residue grown in agricultural fields is allowed when all rules are met, and when no other agricultural viable alternatives to burning are available, as determined by the director. [1] The Idaho Legislature encourages the ISDA and the agricultural community to pursue alternative means to crop residue disposal. [1] The IDEQ open burning rule allows open burning unless the IDEQ Director has approved any economical and reasonable alternatives. [7]
15. Are the public notified of planned burning? If so, please describe how.	One of the voluntary guidelines for the disposal of crop residue is that every effort should be made to notify neighbors and persons located near the burning site prior to burning taking place. [2]
16. If the SMP is voluntary, are there	Idaho does not have a statewide smoke management plan for agricultural burning. However, the CRD MOU has

Smoke Management Program Component	State
	Idaho
incentives for burner participation? Please describe the incentives.	voluntary smoke management guidelines. The CRD training program emphasizes that fire must be used wisely or burners may lose it as a tool. [5]
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	No. [5]
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	The ISDA will conduct investigations of complaints to determine whether persons disposing of crop residue are complying with the statewide provisions of the CRD MOU. [2] The smoke management guidelines are voluntary. [6] If someone conducts a burn while there is a ban on burning, the IDEQ can give them a written warning. Repeat offenders may receive a Notice of Violation. There may be local burning ordinances. If so, the local sheriff would have the authority to penalize violators. [5][7][8] The IDEQ open burning rule does not exempt burners from liability for damages or injuries that may result from open burning. [7]
Public Education	
19. Are there any public educational programs in place? If so, please describe.	There is no formal public education program in place. However, the ISDA did hold public meetings about the changes in the burning regulations. [6] IDEQ has several brochures on open burning, and posts daily air quality and public health advisories for several areas on their website: **http://www2.state.id.us/deq/air/air1.htm**.
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	The ISDA and IDEQ will participate in an annual review with the signatory parties and work cooperatively with the signatory parties to achieve the objectives of the CRD MOU. [2]
Further Information	
21. Referring to the document list at the	Idaho Administrative Code, 58.01.01, Air Pollution Control, Sections 600 through 616, Rules for Control of

Smoke Management Program Component	State
	Idaho
beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	Open Burning. 1998, **http://www2.state.id.us/adm/adminrules/rules/IDAPA58/58INDEX.HTM**. Idaho Administrative Code, 58.01.10, Air Pollution Control, Section 550 through 562, Air Pollution Emergency Rule. Amended April 5, 2000.
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Diane Riley, Air Quality Analyst, ID Department of Environmental Quality, (208) 373-0214, **driley@deq.state.id.us**. Curt Thornburg, ID Department of Agriculture, (208) 322-8623, **cthornbu@agri.state.id.us**.

Source of summary information:

[1] 1999 North Idaho Voluntary Field Burning Smoke Management Plan, signed by the ID Division of Environmental Quality, the ID Smoke Management Advisory Board, and the North Idaho Farmers Association.

[2] North Idaho Farmers Association website, **www.northidahofarmers.org**.

[3] Dan Redline, ID Department of Environmental Quality; personal communication with Stephanie Walsh, EC/R Incorporated, October 25, 2000, and comments dated December 4, 2000.

[4] 1999 North Idaho Field Burning Annual Report, ID Department of Environmental Quality.

Special Note:

This survey was reviewed by the Idaho Department of Environmental Quality. For more information, contact Dan Redline, ID DEQ, Coeur d Alene Regional Office, 2110 Ironwood Parkway, Coeur d Alene, ID, 83814.

Smoke Management Program Component	Kootenai and Benewah Counties
	Idaho
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	The Idaho State Department of Agriculture (IDA) is the lead agency in monitoring and enforcing agricultural regulations, and the director of the IDA. has the authority to regulate crop residue burning under the state statute (Title 22, 4801-4804). [1]
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	There is a voluntary Field Burning SMP for Kootenai and Benewah Counties that has been signed by the ID Division of Environmental Quality (DEQ), the ID Smoke Management Advisory Board (ISMAB), and the North Idaho Farmers Association (NIFA). [1] Recommendations to burn are issued by local smoke management coordinators. The smoke coordinators at the Rathdrum Prairie Weather Station in 1999 included a chief meteorologist and a technical assistant. [4] The meteorologist evaluates local weather conditions and, if conditions are appropriate for good smoke dispersal, he/she designates which growers can begin field burning operations. [1]
3. Please describe the SMP. What are the requirements and general practices	The goal of the SMP is to minimize smoke impacts on the surrounding communities through the coordinated planning efforts of the ISMAB, the growers, the agricultural industry association, and the DEQ. [1][4]

Smoke Management Program Component	Kootenai and Benewah Counties
	Idaho
(voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	The SMP is applicable to all agricultural field burning that occurs in the Kootenai and Benewah counties throughout the year, excluding those agricultural fields that lie within the exterior borders of the Coeur d Alene Indian Reservation. [1][4] The growers association maintains a seasonal weather station on the Rathdrum Prairie which is staffed by a qualified meteorologist and other support staff. This station and its staff are primarily responsible for coordinating the field burning activities of the growers in north Idaho. [1][4] Any person planning to conduct agricultural field burning must first register each field each year with DEQ, and pay a fee of $1 per acre. [1][4] Growers will burn only on the weekdays, Monday through Thursday. The growers agree not to burn on Friday, Saturday, or Sunday, and not to burn on the Labor Day holiday. Field burning is limited to a total of 14 burn days within a 45 day window. Burning may begin August 1, but the official burn season (45 day window) does not start until the first field is lighted. [1][4] A registered grower may burn up to 10 acres per day as a test burn to observe smoke dispersion conditions. Test burns limited to 10 acres per day are not counted as one of the 14 allowed burn days. [1][4] Weather conditions and other factors may contribute to incomplete burns. The grower may need to perform additional burning using mechanical equipment. This type of burning is known as reburning. If the total number of acres reburned in a day exceeds 500 acres, that day is counted as a burn day. The grower must coordinate with the NIFA meteorologist prior to reburning any fields. [1][4] All open burning is prohibited during an Air Stagnation Advisory, which are determined by the DEQ and announced to the general public through press releases. [1][4] Growers are asked to carry with them some type of communication, such as a pager, radio, or cellular phone, while in the field in the event the meteorologist has to curtail or suspend burning for a time. [1][4]
4. How is information on the SMP or other requirements disseminated to burners?	Growers are mailed updated SMP with their registration forms. [3] The burning forecast is distributed to individual growers, the regulatory agencies and other industry contacts by radio, fax, and telephone. [4] Growers are asked to carry with them some type of communication, such as a pager, radio, or cellular phone, while in the field in the event the meteorologist has to curtail or suspend burning for a time. [1][4] A no burn decision will be posted on the weather station answering machine in the event the meteorologist is not available throughout the day. [1][4]
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	The IDA. has developed a training program for agricultural crop residue disposal. This training program is provided by the IDA. in coordination with their annual pesticide certification program and other outreach functions. [3]

Smoke Management Program Component	Kootenai and Benewah Counties Idaho
6. How is the program funded?	The program funding is provided through a combination of grower fees and EPA 105 base grant funds. The growers pay fees to their association which cover the cost of the meteorologist at the Rathdrum Weather station. DEQ collects the registration fees from the growers and this is used for operating expenses, contracts such as the Hotline service, and the purchase of specific monitoring equipment to support the SMP. DEQ personnel use 105 base grant fees to fund their time supporting the program. [3]
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	The meteorologist coordinates whenever possible with other regional smoke management programs such as the Coaur d Alene Tribe and the Spokane County Air Pollution Control Authority. The Tribal smoke management coordinators exchanged burn information with the Rathdrum Prairie on a daily basis. The Spokane Air Pollution Control Authority operated a web page which listed the daily burn decisions from each of the smoke management organizations in the region; however, the web page is no longer operational due resource limitations. [3][4]
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	The DEQ maintains all of the air quality information collected throughout the burn season, which includes raw data and quality assurance parameters. The DEQ also archives all of the burn registration forms submitted by the growers which identify the range, township and section for each of the fields planned for burning. The NIFA maintains records of the National Weather Service forecasts, wind profiles collected from the Rathdrum Prairie, forecasts and burn advisories, and observations made by on-site personnel. After each field burning season, DEQ and the NIFA develop summary reports to provide an overview of the program for the year. [1][3][4]
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	During the Spring of 1999, growers registered 774 acres for burning which were all cereal grain fields. During the Summer of 1999, growers registered a total of 6,115 acres which were all grass seed fields. The total number of registered acres was 6,889, reflecting a four-year trend of decreasing acreage burned. The total number of acres actually burned is not known, but it is estimated that over 95% of the registered acres are burned. DEQ does not have the regulatory authority to officially track the number of acres burned under the SMP as long as the registration requirement is met. [4] *Continued on next page*
9. Continued	Acres per year registered with DEQ: [4] Year / Grass Acres / Non-Grass Acres / Total Acres 1999 / 6,115 / 774 / 6,889 1998 / 5,280 / 339 / 5,619 1997 / 7,006 / 1,395 / 8,401

Smoke Management Program Component	Kootenai and Benewah Counties
	Idaho
	1996 8,225 1,114 9,369 1995 9,560 1,165 10,725
10. What time of year is burning conducted for each major fuel type or crop?	The burn season may begin on August 1; it officially begins when the first field is burned and lasts 45 days. [1]
11. What actions are required to minimize emissions from fire?	The goal of the smoke management plan is to minimize the impacts of agricultural burning by dispersing the smoke as much as possible. The smoke management plan does not minimize the amount of smoke generated by burning. [4]
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	Growers will burn only on the weekdays, Monday through Thursday. The growers agree not to burn on Friday, Saturday, or Sunday, and not to burn on the Labor Day holiday. Field burning is limited to a total of 14 burn days within a 45 day window. [1] All open burning is prohibited during an Air Stagnation Advisory, which are determined by the DEQ and announced to the general public through press releases. [1]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	The NIFA maintains a seasonal weather station on the Rathdrum Prairie which is staffed by a qualified meteorologist and other support staff. This station and its staff are primarily responsible for coordinating the field burning activities of the growers in north Idaho. DEQ maintains a network of air quality monitoring sites specifically to support the SMP. These sites monitor air quality trends during field burning season. DEQ has provided the meteorologist with electronic access to all the real-time monitoring devices applicable to the smoke management program. [1][4] *Continued on next page*
13. Continued	The NIFA meteorologist evaluates local weather conditions in the morning utilizing various weather information sources. If conditions are appropriate for good smoke dispersion, the meteorologist designates which growers can begin field burning operations. The DEQ is available for consultation. A no burn decision will be posted on the weather station answering machine in the event the meteorologist is not available throughout the day. [1][4] During the burn period, the NIFA meteorologist monitors $PM_{2.5}$ and PM_{10} concentrations at three DEQ air quality monitoring stations. The meteorologist also has access to a nephelometer located near Hayden and at

Smoke Management Program Component	Kootenai and Benewah Counties
	Idaho
	Farragut State Park. If readings exceed certain levels, the meteorologist will reevaluate conditions for smoke dispersion to minimize further impacts. [1][4] The burn advisory or forecast is usually completed by 9:30 a.m. and then reevaluated throughout the day as conditions change. [4]
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	The goal of the smoke management plan is to minimize the impacts of agricultural burning by dispersing the smoke as much as possible. The smoke management plan does not minimize the amount of smoke generated by burning. [4]
15. Are the public notified of planned burning? If so, please describe how.	The public is notified through numerous local newspaper articles that the season is beginning with the start-up of the field burning hotline service. [3]
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	Intense media coverage and public criticism of field burning has resulted in good participation from the growers. Recent lawsuits against field burning have provided additional motivation. [3]
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	The meteorologist coordinates whenever possible with other regional smoke management programs such as the Coaur d Alene Tribe and the Spokane County Air Pollution Control Authority. The Tribal smoke management coordinators exchanged burn information with the Rathdrum Prairie on a daily basis. The Spokane Air Pollution Control Authority operated a web page which listed the daily burn decisions from each of the smoke management organizations in the region. [4] The goal of the smoke management plan is to minimize the impacts of agricultural burning by dispersing the smoke as much as possible. [4]
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	DEQ has the responsibility to receiving and tracking complaints associated with field burning activities. [1] A three-member enforcement team consisting of a representative from NIFA, DEQ, and ISMAB respond to any alleged violations of the voluntary smoke management program or any alleged violations of Idaho Code 22-4804. If a violation of the plan is confirmed by the enforcement team, the grower may be subject to financial penalties as imposed by the SMP. A fine of $500 per field plus $10 per acre burned may be issued for: burning a field without first registering the field; burning a field on a Friday, Saturday, Sunday, or the Labor Day holiday; or burning a field without receiving approval from the NIFA meteorologist. A fine of $250 per field may be issued for: burning a field after the designated hours defined by the NIFA meteorologist; violating other conditions identified on the

Smoke Management Program Component	Kootenai and Benewah Counties Idaho
	burn permit; or using poor fire management as determined by the enforcement team. [1]
Public Education	
19. Are there any public educational programs in place? If so, please describe.	The NIFA has a website that provides information about grass production and agricultural burning. [2]
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	The DEA maintains all of the air quality information collected throughout the burn season, which includes raw data and quality assurance parameters. The NIFA maintains records of the National Weather Service forecasts, wind profiles collected from the Rathdrum Prairie, forecasts and burn advisories, and observations made by on-site personnel. After each field burning season, DEQ and the NIFA develop summary reports to provide an overview of the program for the year. The Idaho Smoke Management Advisory Board reviews the data from each season and makes recommendations for changes when problems are identified. [1][3][4]
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	None.
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Dan Redline, ID Department of Environmental Quality, (208) 769-1422, **dredline@deq.state.id.us**. Linda Clovis, North Idaho Farmers Association, (208)666-0612, **nifarmer@aol.com**.

Source of summary information:

[1] Kansas Administrative Regulations, Kansas Department of Health and the Environment, 28-19-645 through 28-19-648, **http://www.kdhe.state.ks.us/pdf/regs/28-19.pdf**.

[2] Russell Brichacek, Environmental Scientist, Air & Asbestos Compliance Section, KS Department of Health & Environment; conversation with Stephanie Walsh, EC/R Incorporated, on October 20, 2000, and comments dated November 22, 2000.

[3] Dr. Paul Ohlenbusch, KS State University Cooperative Extension; personal communication with Stephanie Walsh, EC/R Incorporated, October 23, 2000.

Special Note:

This survey was reviewed by the Kansas Department of Health and the Environment. For more information, contact Russell Brichacek, Environmental Scientist, KS DHE, Air & Asbestos Compliance Section, Forbes Field, Building #283, Topeka, KS, 66620-0001.

Smoke Management Program Component	State
	Kansas
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	The KS Department of Health and the Environment does enforce open burning type regulations in the state. The state has a specific regulation concerning agricultural type open burning. This regulation contains requirements for notification of proposed burning to local authorities, contains provisions if smoke carries across public roadways or airports, and requires onsite supervision until fire is extinguished. The department recognizes that the responsibility to fully enforce agricultural burning lies with local governments.
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	There is no SMP. An individual who proposes to burn must notify the local fire control authority who has jurisdiction over the area before the burn begins, unless the appropriate governing body has established a policy that notification is not required. Local jurisdictions may adopt more restrictive ordinances or resolutions governing agricultural burning. [1]
3. Please describe the SMP. What are the requirements and general practices	There is no SMP. The regulations governing agricultural burning state that: a person shall notify the local fire control authority

Smoke Management Program Component	State
	Kansas
(voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	with jurisdiction over the area before the burn begins, unless the appropriate governing body has established a policy that notification is not required; a burner shall not conduct a burn that creates a traffic or airport safety hazard; and a burner shall insure that the burning is supervised until the fire is extinguished. Local jurisdictions may adopt more restrictive ordinances or resolutions governing agricultural burning. [1]
4. How is information on the SMP or other requirements disseminated to burners?	Not applicable. The local County Extension office in conjunction with Kansas State University (KSU) has developed brochures and pamphlets on proper procedures for agricultural burning. Additionally, they conduct periodic training for farmers and ranchers on proper burning techniques. [2]
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	The KS Department of Health & Environment does not specifically provide burner training, although it will sometimes hold meetings with organizations to do outreach, review burning regulations, and so forth. The Farm Bureau and County Extension services may provide burning training on occasion. [2]
6. How is the program funded?	Not applicable.
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	No.
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	This information is not collected by the state. However, KSU Cooperative Extension estimates the amount of agricultural burning each year. [3]
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	The KSU Cooperative Extension estimates that the 5-year average for agricultural burning is 4.5 to 5 million acres per year. Approximately 75 percent of the burning is native rangeland and takes place from late March through April. The rest of the burning is crop residue: primarily irrigated pivot (corn) in the fall, as well as wheat stubble in the summer. [3]
10. What time of year is burning conducted for each major fuel type or crop?	See Question #9 above.

Smoke Management Program Component	State
	Kansas
11. What actions are required to minimize emissions from fire?	Follow recommended burning practices. [2]
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	If conditions exist that may result in smoke blowing toward a public roadway, the person conducting the burn shall give adequate notification to the highway patrol, sheriff s office or other appropriate state or local traffic control authorities before burning. If smoke may effect visibility at an airport, the person conducting the burn shall give adequate notification to the appropriate authorities before burning. [1]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	KSU has developed guidelines that incorporate this information. [2]
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	No. KSU has scientific data to support burning of native grasslands in the state. If managed burning is not conducted in these areas, the pastures will be overrun with woody and other undesirable species of trees and brush. [2]
15. Are the public notified of planned burning? If so, please describe how.	There are no public notification requirements at the state level. [2]
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	Not applicable.
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so,	Not applicable.

Smoke Management Program Component	State
	Kansas
please describe?	
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	The state law does provide for civil penalties. [2]
Public Education	
19. Are there any public educational programs in place? If so, please describe.	The KS Department of Health & Environment will sometimes hold meetings with organizations to do outreach, review burning regulations, and so forth. The Farm Bureau and County Extension services may provide burning training on occasion. [2]
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	Not applicable.
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	None.
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Mr. Russell Brichacek, Environmental Scientist, Air & Asbestos Compliance Section, KS Department of Health & Environment, (785) 296-1544. Dr. Paul Ohlenbusch, Kansas State University Cooperative Extension, (785) 532-5776.

Source of summary information:

[1] Louisiana Environmental Quality Regulations, Title 33, Chapter 11, Control of Emissions of Smoke.

[2] Carrie Borel and Dr. Bill Carney, Louisiana State University Cooperative Extension - Agricultural Center; personal communication with Stephanie Walsh, EC/R Incorporated, on November 7, 2000, and comments dated December 8, 2000.

Special Note:

This survey was reviewed by the Louisiana State University Cooperative Extension - Agriculture Center. For more information, contact Carrie Borel and Dr. Bill Carney, LSU Agriculture Center, P.O. Box 25203, Baton Rouge, LA, 70894-5203.

Smoke Management Program Component	State
	Louisiana
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	Agricultural burning is exempt from the Louisiana Environmental Quality Regulations for Control of Emissions of Smoke. [1]
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	There is a voluntary SMP for agricultural burning that was developed by several agencies, including Louisiana State University Cooperative Extension - Agricultural Center (LSU Ag Center), the LA Department of Agriculture and Forestry (LDAF), and the American Sugarcane League. The LSU Ag Center developed a training program for burners where burners are taught the meteorological conditions to consider before burning. The LSU Ag Center also recommends that burners consult the National Weather Service (NWS) to see what category day it is (different categories indicate different weather conditions, including those for which burning is not advised). The burners themselves make the burn/no-burn decisions. [2]
3. Please describe the SMP. What are the requirements and general practices	The primary component of the SMP is a burner training program developed and given by the LSU Ag Center. Burners are taught to develop prescribed burn plans that consider weather conditions (i.e. wind speed, wind

Smoke Management Program Component	State
	Louisiana
(voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	direction, mixing height, etc.) and consult the NWS weather category. Burners are taught how to use this information to predict how far and in which direction smoke and ash will likely travel. Burners are encouraged to identify sensitive areas surrounding their fields, avoid affecting sensitive populations when possible, and notify neighbors in close proximity. The LSU Ag Center recommends that burners stay on site from the beginning of the burn until the fire is completely extinguished. [2] The burner training program was offered for the first time this year. It will be offered again next year. [2]
4. How is information on the SMP or other requirements disseminated to burners?	The American Sugarcane League (ASL) recommended the burner training program to its members. [2] The LSU Ag Center provides information throughout the year during producer meetings. [2]
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	The primary component of the SMP is a burner training program developed and given by the LSU Ag Center. Burners must participate in at least five burns to become certified. The LDAF gives the certification. [2] See Question #3 for more detail.
6. How is the program funded?	There is no special funding for the program and no fees to participate. The program is a joint effort between the LSU Ag Center, the LDAF, and the ASL. [2]
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	The burner training program was developed in coordination with other sugarcane producing states in order to consider the factors that are unique to burning sugarcane. There was also some coordination with silviculture burning. However, there is no coordination with neighboring states. [2]
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	This type of information is not collected. [2]
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	By far, the most frequently burned crop is sugarcane. Approximately 450,000 acres of sugarcane are planted annually, and approximately half of that is burned. Occasionally, rice straw, wheat stubble, and marsh is burned. [2]

Smoke Management Program Component	State
	Louisiana
10. What time of year is burning conducted for each major fuel type or crop?	Sugarcane is burned during the harvest season (approximately October through December). Marsh is primarily burned in the fall. [2]
11. What actions are required to minimize emissions from fire?	The focus of the burner training program is more on lessening the impacts of agricultural burning and not on reducing emissions. [2]
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	See Question #3.
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	See Question #3.
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	There is no discussion of alternatives to burning in the burner training program. However, the LSU Ag Center is conducting research into burning alternatives. [2]
15. Are the public notified of planned burning? If so, please describe how.	The LSU Ag Center recommends that burners identify neighbors in close proximity. [2]
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	There are no formal incentives to participate. The LSU Ag Center works to farmers awareness of the importance of considering various factors before burning. [2]
17. Does your program address visibility (regional haze or the national	Visibility concerns are addressed in the burner training program. [2]

Smoke Management Program Component	State
	Louisiana
visibility goal) concerns, and, if so, please describe?	
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	The program is voluntary.
Public Education	
19. Are there any public educational programs in place? If so, please describe.	The LSU Ag Center published a fact sheet titled, Benefits of Burning. The sheet explains the economic benefits from and biological need for burning. [2]
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	The burner training program is very new. It is being reviewed by tracking the number of burning-related complaints that are received and by the amount of interest sugarcane producers show in the program. [2]
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	None.
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Carrie Borel, Louisiana State University Cooperative Extension - Agricultural Center, (225) 388-2544, **cborel@agctr.lsu.edu**. Dr. Bill Carney, Louisiana State University Cooperative Extension - Agricultural Center, (225) 388-6998, **bcarney@agctr.lsu.edu**.

Source of summary information:

[1] Montana Department of Environmental Quality Rules, Title 17, Chapter 8-Air Quality, Sub-Chapter 6-Open Burning, http://www.deq.state.mt.us/dir/Legal/Chapters/CH08-06.PDF.

[2] Bob Habeck, Montana DEQ; personal communication with G. MacDonald, EC/R Incorporated, on July 18, 2000, and comments dated November 13, 2000.

[3] WESTAR, Western States Agricultural Burning Survey, 1999.

[4] Dan Walsh, Montana DEQ; personal communication with Stephanie Walsh, EC/R Incorporated, on November 2, 2000.

Special Note:

This survey was reviewed by the Montana Department of Environmental Quality. For more information, contact Bob Habeck, MT DEQ, 1520 East 6th Avenue, Helena, MT, 59620.

Smoke Management Program Component	State
	Montana
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	Agricultural burning is regulated by Montana s open burning rules under the authority of the Montana Department of Environmental Quality (DEQ). [1] The DEQ has the regulatory authority to restrict burning (75-2-201 to 233, Montana Code Annotated). [2] Agricultural burners may be members of the Montana/Idaho Airshed Group if they burn the required amount. However, to date, none have either chosen to join or have actually burned that much in Montana. Therefore, only forestry burners are current members of the airshed group, and agricultural burners are regulated under the open burning rules. [2] The open burning rules that apply to agricultural burning are: Administrative Rules of Montana (ARM) 17.8.605 Special Burning Periods, and ARM 17.8.606 Minor Open Burning Source Requirements. [1]
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	Montana does not have a smoke management plan for agricultural burning. The DEQ is the permitting authority September through February; the rest of the year, the burner must determine if ventilation conditions are acceptable for burning. [4]
3. Please describe the SMP. What are	All minor open burning sources must conform with best available control technology (BACT) as defined in DEQ

Smoke Management Program Component	State
	Montana
the requirements and general practices (voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	rule 17.8.601: (BACT) means those techniques and methods of controlling emission of pollutants from an existing or proposed open burning source which limit those emissions to the maximum degree which the DEQ determines, on a case-by-case basis, is achievable for that source, taking into account impacts on energy use, the environment, and the economy, and any other costs, including cost to the source. Such techniques and methods may include the following: (i) scheduling of burning during periods and seasons of good ventilation; (ii) applying dispersion forecasts; (iii) utilizing predictive modeling results performed by and available from the DEQ to minimize smoke impacts; (iv) limiting the amount of burning to be performed during any one time; (v) using ignition and burning techniques which minimize smoke production; (vi) selecting fuel preparation methods that will minimize dirt and moisture content; (vii) promoting fuel configurations which create an adequate air to fuel ratio; (viii) prioritizing burns as to air quality impact and assigning control techniques accordingly; and (ix) promoting alternative treatments and uses of materials to be burned. [1] Essential agricultural open burning may be conducted during the entire year. Essential is defined very broadly and would include all situations for burning on a farm or ranch. [1][2] To conduct essential agricultural burning during September, October, or November, a minor open burning source must adhere to the time periods set for burning by DEQ that are available by calling the department at (800) 225-6779. [1] To conduct essential agricultural open burning during December, January, or February, a minor source must comply with the following conditions: (a) Outside the eastern Montana open burning zone, a minor open burning source must: (i) submit a written request to the department, demonstrating that essential agricultural open burning must be conducted prior to reopening of open burning in March; (ii) receive permission for each specific burn from the department; and (iii) adhere to the time periods set for burning by the department that are available by calling the department at (800) 225-6779; (b) Inside the eastern Montana open burning zone, a minor open burning source need only notify the DEQ by telephone of any burning prior to ignition. Burning is allowed when ventilation conditions are good or excellent. Ventilation conditions are determined by the DEQ using a ventilation index, which is defined as the product of the mixing depth in feet at the time of the daily maximum temperature, times the average transport wind in knots through the mixed layer divided by 100. [1][4]+ During March through August, minor open burning sources must conform with BACT and comply with any local burning regulations. [1]
4. How is information on the SMP or other requirements disseminated to burners?	Burners can call the department at (800) 225-6779 to obtain burning information. [1] Montana posts daily air quality and public health advisories at http://www.deq.state.mt.us/fireupdates/.
5. Is burner training available, e.g.,	Not through DEQ. [4]

Smoke Management Program Component	State
	Montana
certification, qualification, air quality, etc.?	
6. How is the program funded?	The DEQ program is funded in part through burning permit fees, and in part through general operating fees from other sources. [4]
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	Agricultural burners may be members of the Montana/Idaho Airshed Group if they burn the required amount. However, to date, none have either chosen to join or have actually burned that much in Montana. Therefore, only forestry burners are current members of the airshed group, and agricultural burners are regulated under the open burning rules. [2]
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	Data not tracked. [3]
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	The types of crops burned include small grains such as wheat and barley, Christmas tree farming debris, irrigation ditch burning, and sagebrush conversion. Data on acreage burned for each crop are not tracked. [3]
10. What time of year is burning conducted for each major fuel type or crop?	Data not tracked. [3]
11. What actions are required to minimize emissions from fire?	ARM 17.8.606 requires that best available control technology (BACT) be applied to minimize emissions from fires. BACT means, those techniques and methods of controlling emission of pollutants from an existing or proposed open burning source, which limit those emissions to the maximum degree, which the department determines, on a case-by-case basis, is achievable for that source, taking into account impacts on energy use, the environment, and the economy, and any other costs, including cost to the source. Such techniques and methods may include the following: scheduling of burning during periods and seasons of good ventilation, applying dispersion forecasts, utilizing predictive modeling results performed by and available from the Department of Environmental Quality (DEQ) to minimize smoke impacts, limiting the amount of burning to be performed during

Smoke Management Program Component	State
	Montana
	any one time, using ignition and burning techniques which minimize smoke production, selecting fuel preparation methods that will minimize dirt and moisture content, promoting fuel configurations which create an adequate air to fuel ratio, prioritizing burns as to air quality impact and assigning control techniques accordingly, and promoting alternative treatments and uses of materials to be burned. [1]
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	See question 11.
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	See question 11. Inside the eastern Montana open burning zone, burning is allowed when ventilation conditions are good to excellent. Ventilation conditions are determined by the department using a ventilation index, which is defined as the product of mixing depth in feet at the time of the daily maximum temperature, times the average transport wind in knots through the mixed layer divided by 100. Good or excellent ventilation conditions exist when the ventilation index is 400 or higher. Forecasts of ventilation conditions may be obtained by calling the department at (800) 225-6779. [1]
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	See question 11.
15. Are the public notified of planned burning? If so, please describe how.	No. [4]
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	The regulations are not voluntary.
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	Not directly. [4]

Smoke Management Program Component	State
	Montana
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	Depending on the violation and if their have been previous violations, the individual may receive a warning letter or a notice of violation which could result in a fine. [4]
Public Education	
19. Are there any public educational programs in place? If so, please describe.	Montana has posted, during conditions of poor air quality and visibility, daily air quality and public health advisories at http://www.deq.state.mt.us/fireupdates/. The DEQ puts out press releases throughout the year to notify people when the open burning requirements change. [4]
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	No. [4]
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	There are no missing documents. [2]
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Bob Habeck, MT Department of Environmental Quality, (406) 444-7305, bhabeck@state.mt.us. Dan Walsh, MT-Department of Environmental Quality, (406) 444-0285, **dwalsh@state.mt.us**. John Coefield, MT Department of Environmental Quality, (406) 444-5272; **jcoefield@state.mt.us**

Source of summary information:

[1] Nebraska Revised Statute 81-520.01, Statewide open burning ban; waiver; permit; fee, **http://statutes.unicam.state.ne.us/lpBin20/lpext.dll?f=templates&fn=main-j.htm&2.0**.

[2] Nebraska Dept. of Environmental Quality Regulations, Title 129, Chapter 30, Open fires, prohibited, exceptions, **http://www.deq.state.ne.us/RuleandR.nsf/Pages/Rules**.

[3] Nebraska Dept. of Environmental Quality, Environmental Fact Sheet No. 00-003, Open Burning, March 2000, **http://www.deq.state.ne.us/Publica.nsf/a9f87abbcc29fa1f8625687700625436/11680fd70c9fdc91862568d300508380?OpenDocument**.

[4] Angela Duncan, Department of Environmental Quality; personal communication with Stephanie Walsh, EC/R Incorporated, on October 20, 2000 and comments dated December 20, 2000.

Special Note:

This survey was reviewed by the NE Department of Environmental Quality. For more information, contact Angela Duncan, Air Quality Division, NE DEQ, P.O. Box 98922, Lincoln, NE, 68509.

Smoke Management Program Component	State
	Nebraska
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	So long as it does not cause a public nuisance or traffic hazard, agricultural burning is exempt from the open burning ban under the NE Air Pollution Control Rules and Regulations. A permit may be required from the local fire chief. [2][3]
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	There is no SMP for agricultural burning.
3. Please describe the SMP. What are	There is no SMP for agricultural burning.

Smoke Management Program Component	State
	Nebraska
the requirements and general practices (voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	A permit may be required from the local fire chief. [3]
4. How is information on the SMP or other requirements disseminated to burners?	There is no SMP for agricultural burning.
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	The State does not provide burner training.
6. How is the program funded?	Not applicable.
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	No.
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	This information is not collected by the State. [4]
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	This information is not collected by the State. [4]
10. What time of year is burning conducted for each major fuel type or crop?	This information is not collected by the State. [4]

Smoke Management Program Component	State
	Nebraska
11. What actions are required to minimize emissions from fire?	None.
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	Agricultural burning is only allowed where no nuisance or traffic hazard is created. No specific actions are required to minimize smoke impacts. [2][3]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	Not applicable.
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	No.
15. Are the public notified of planned burning? If so, please describe how.	There are no public notification requirements at the state level.
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	Not applicable.
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	Not applicable.
Enforcement	

Smoke Management Program Component	State
	Nebraska
18. Are there penalties or other types of enforcement tools used for non-compliance?	Not applicable.
Public Education	
19. Are there any public educational programs in place? If so, please describe.	The University of Nebraska-Lincoln Cooperative Extension, *NebGuide*, Open Burning article encourages the use of alternatives to burning. [4] No other information was available.
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	Not applicable.
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	None.
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Angela Duncan, Air Quality Division, Nebraska Department of Environmental Quality, (402) 471-2189.

Source of summary information:

[1] New Mexico State Regulations Title 20 (Environmental Protection), Chapter 2 (Air Quality), Part 60 (Open Burning). November 30, 1995, **http://www.state.nm.us/cpr/rules_top.htm**.

[2] WESTAR, Western States Agricultural Burning Survey, 1999.

[3] Brad Musick, NM Environment Department, Air Quality Bureau; personal communication with Stephanie Walsh, EC/R Incorporated, October 23, 2000, and comments dated November 13, 2000.

Special Note:

This survey was reviewed by the NM Environment Department. For more information, contact Brad Musick, NMED, Air Quality Bureau, Harold S. Runnels Building, 1190 St. Francis Drive, Santa Fe, New Mexico, 87502-0110.

Smoke Management Program Component	State
	New Mexico
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	Agricultural burning is regulated by the state open burning rules. [1] The New Mexico Environment Department (NMED) is prohibited from requiring permits for agricultural burning, unless it is for weed abatement or control of vegetation in irrigation ditches and canals. [1] Some counties and municipalities may have ordinances prohibiting agricultural burning or requiring a permit from the local fire department. [3]
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	New Mexico does not have a SMP for agricultural burning. The New Mexico Smoke Management Memorandum of Understanding does not apply to agricultural burning.
3. Please describe the SMP. What are the requirements and general practices (voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	Open burning is allowed for agricultural management, excluding timber, subject to permit-by-rule requirements that: smoke shall not pass across a public road or landing strip and impair visibility; no natural or synthetic rubber or petroleum products may be burned (except, for the purpose of frost control in agricultural operations, natural petroleum products may be burned); the amount of dirt on the material being burned must be minimized; all burning, except agricultural burning, must take place between 10 a.m. and 4 p.m.; the material to be burned must be as dry as possible; and the wind direction at the site of agricultural burning must be such that the smoke will

Smoke Management Program Component	State
	New Mexico
	generally be carried away from areas of human habitation. [1] The NMED is prohibited from requiring permits for agricultural burning unless it is for weed abatement or control of vegetation in irrigation ditches and canals. The information required on permit requests may include: the requestor s name, address, and telephone number; the location where the burning is to be conducted; the type and quantity of material to be burned; the date when the burning is to be conducted; the methods that will be followed to ignite, maintain, and control the burning; the reasons why the requestor believes the burning is necessary; and the alternatives to burning and the reasons why the requestor believes them to be feasible. [1]
4. How is information on the SMP or other requirements disseminated to burners?	There are no formal mechanisms. The NMED published a brochure on Backyard Burning and distributed it with a video and public service announcements in one district with air quality concerns, but it did not specifically address agricultural burning. [3] In response to public complaints about burning, the NMED held informal meetings with growers in one area to discuss agricultural burning, alternatives to burning, and air quality problems. [3] There are field staff in some local offices that can review the agricultural burning requirements with burners who come in seeking a permit. [3]
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	No. [5] In response to public complaints about burning, the NMED held informal meetings with growers in one area to discuss agricultural burning, alternatives to burning, and air quality problems. [3]
6. How is the program funded?	Not applicable.
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	There is no coordination with other states or tribes. [3] There is a smoke management MOU with federal land managers for prescribed burns, but it does not apply to agricultural burning. [3]
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	There are no good statewide records. There is an inventory of agricultural burning in the Sunland Park ozone nonattainment area. [2] The State does not collect this information. [3]
9. If available, please list the annual	The main kinds of agricultural burning are pecan orchard prunings, field stubble burning, and weed removal from

Smoke Management Program Component	State
	New Mexico
number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	irrigation ditches. [3] There is not significant agricultural burning in the Sunland Park ozone nonattainment area. The burning that takes place involves the trimmings for the pecan orchards and the burning of weeds (especially tumbleweeds) in ditches. [2][3]
10. What time of year is burning conducted for each major fuel type or crop?	Pecan orchard prunings are burned in the winter. Burning for weed removal from irrigation ditches occurs late winter and early spring. [3]
11. What actions are required to minimize emissions from fire?	No natural or synthetic rubber or petroleum products may be burned (except, for the purpose of frost control in agricultural operations, natural petroleum products may be burned); care must be taken to minimize the amount of dirt on the material being burned; and the material must be as dry as possible.[1]
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	The emission of smoke from agricultural burning must not be allowed to pass onto or across a public road or landing strip such that a hazard is created by impairment of visibility. [1] The wind direction at the site of agricultural burning must be such that the smoke will generally be carried away from areas of human habitation. [1]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	The wind direction at the site of agricultural burning must be such that the smoke will generally be carried away from areas of human habitation. [1] All burning, except exempted agricultural burning, must take place between the hours of 10:00 a.m. and 4:00 p.m. [1]
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	The NMED is prohibited from requiring permits for agricultural burning unless it is for weed abatement or control of vegetation in irrigation ditches and canals. The information the NMED may require on permit applications includes the reasons why the requestor believes the burning is necessary and the alternatives to burning and the reasons why the requestor believes them to be feasible. [1]

Smoke Management Program Component	State
	New Mexico
15. Are the public notified of planned burning? If so, please describe how.	No. [3]
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	There is no SMP.
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	The emission of smoke from agricultural burning must not be allowed to pass onto or across a public road or landing strip such that a hazard is created by impairment of visibility. [1]
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	The procedure for addressing violations of the open burning regulations is to first issue a warning letter; if the violation continues, the case can be sent to local court as a petty misdemeanor. The penalty is up to the judge, who may impose a maximum fine of $500 and up to 6 months jail time for petty misdemeanors, in general. However, it is very rare for agricultural burning violations to be sent to court. [3]
Public Education	
19. Are there any public educational programs in place? If so, please describe.	There are no formal public education programs. The NMED published a brochure on Backyard Burning and distributed it with a video and public service announcements in one district with air quality concerns, but it did not specifically address agricultural burning. [3] In response to public complaints about burning, the NMED held informal meetings with growers in one area to discuss agricultural burning, alternatives to burning, and air quality problems. [3]
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	There are no formal provisions for program evaluation. However, the rule and administrative process is currently being reviewed and may be revised as a result. [3]
Further Information	

Smoke Management Program Component	State
	New Mexico
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	No documents are missing from the list. [3]
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Brad Musick, NM Environment Department, Air Quality Bureau, (505) 827-0335, **brad_musick@nmenv.state.nm.us**. Sandra Ely, Bureau Chief, NM Environment Department, Air Quality Bureau, (505) 955-8091, **sandra_ely@nmenv.state.nm.us**.

Source of summary information:

[1] North Dakota Air Pollution Control Rules, Chapter 33-15-04, Open Burning Restrictions, **http://www.health.state.nd.us/ndhd/environ/ee/air/regs/331504.pdf**.

[2] Comments received from the North Dakota Health Department dated July 20, 2000.

[3] Chuck McDonald, North Dakota Health Department; personal communication with Stephanie Walsh, EC/R Incorporated, October 23, 2000, and comments dated December 4, 2000.

Special Note:

This survey was reviewed by the North Dakota Health Department. For more information, contact Chuck McDonald, ND HD, 1200 Missouri Avenue, Bismark, ND, 58506-5520.

Smoke Management Program Component	State
	North Dakota
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	North Dakota regulations specify permissible open burning and the applicable conditions. Permissible open burning includes, but is not limited to, the burning of trees, brush, grass, wood, and other vegetable matter in the clearing of land, right-of-way maintenance operations, and agricultural crop burning. In order to burn a material not specifically allowed in the regulations, a variance to the rules must be obtained from the North Dakota Department of Health, Division of Air Quality (DAQ), by first submitting an application for an open burning variance. [1]
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	North Dakota does not have a smoke management program for agricultural burning.
3. Please describe the SMP. What are the requirements and general practices (voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	Open burning for agricultural purposes is permissible under the rule. Several conditions apply and are listed under the pertinent questions in this survey. [1] If state or local fire officials determine conditions unsafe for open burning, such burning must cease until conditions are deemed safe by such officials. [1] Burning activities must be attended and supervised at all times burning is in progress. [1]

Smoke Management Program Component	State
	North Dakota
4. How is information on the SMP or other requirements disseminated to burners?	Not applicable.
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	No. [3]
6. How is the program funded?	Not applicable.
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	There is no inter-jurisdictional coordination of agricultural burning. The open burning rules are also applicable to prescribed burning. [1]
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	The State does not collect this information. [3]
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	The primary crop that is burned is wheat stubble. The State does not collect information on the acreage burned. [3]
10. What time of year is burning conducted for each major fuel type or crop?	Most of the burning occurs in the fall. [3]
11. What actions are required to minimize emissions from fire?	Care must be used to minimize the amount of dirt on the material being burned and the material must be dry enough to burn cleanly. [1] Oils, rubber, and other materials that produce unreasonable amounts of air contaminants may not be burned. [1]

Smoke Management Program Component	State
	North Dakota
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	Burning must not be conducted upwind of, or in proximity to, an occupied building such that the ambient air of such occupied building may be adversely affected by the air contaminants being emitted. [1] Except in an emergency, burning may not be conducted in such proximity of any Class I area that the ambient air of such area is adversely impacted. [1]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	The burning may be conducted only when meteorological conditions favor smoke dispersion and air mixing. [1] Burning is prohibited if the fire index is in the extreme category as issued by the National Weather Service. Notification is required to the DAQ prior to starting the burn if the fire index is in the very high category. [1]
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	Not applicable.
15. Are the public notified of planned burning? If so, please describe how.	There is no current requirement to notify the affected public. [2]
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	There is no SMP.
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	The burning must not be conducted adjacent to any highway or public road so as to create a traffic hazard. [1] The burning must not be conducted adjacent to any operational military, commercial, county, municipal, or private airport or landing strip in such a manner as to create a hazard. [1] Except in an emergency, the visibility of any Class I area cannot be adversely impacted. [1]
Enforcement	

Smoke Management Program Component	State
	North Dakota
18. Are there penalties or other types of enforcement tools used for non-compliance?	Fines up to $10,000 per day per violation are authorized under the Air Pollution Control Rules. [2]
Public Education	
19. Are there any public educational programs in place? If so, please describe.	No program has been established at this time. [2]
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	Not at this time. [2]
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	The list is complete. [3]
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Chuck McDonald, ND Health Department, Division of Air Quality, (701) 328-5188, **cmcdonal@state.nd.us.** Dana Mount, ND Health Department, Environmental Chief s Office, (701) 328-5202, **dmount@state.nd.us**.

Source of summary information:

[1] Nevada Division of Environmental Protection, Draft Handbook for Agricultural Burning in Nevada.

[2] Nevada Smoke Management Program, July 6, 1999, at http://www.state.nv.us/ndep/bao/smoke1.htm.

[3] Comments received from the Nevada Division of Environmental Protection dated August, 2000 and December 8, 2000.

Special Note:

This survey was reviewed by the Nevada Division of Environmental Protection . For more information, contact Curtis Payne, NV DEP, 333 West Nye Lane, Carson City, NV, 89706.

Smoke Management Program Component	State
	Nevada
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	Agriculture is exempt from State open burn regulations except where prohibited by local ordinances or regulations. Local governments must allow for customarily accepted agricultural practices and must consult the Division of Agriculture or local conservation district to determine what these practices are before adopting ordinances, which may affect agricultural operations. The State is working with the agricultural community toward developing a voluntary program (Nevada Handbook for Agricultural Burners, or HAB). [1][3] The regulatory agency for the voluntary program is the Nevada Department of Environmental Protection (NDEP) or a locally established smoke coordination group. [3]
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	The state is working with the agricultural community toward developing a voluntary agricultural burning program. Comments on the program are expected September 1, 2000. The revised HAB will be distributed shortly thereafter and be made available at the Bureau s web site (**www.state.nv.us/ndep/bao/smoke1.htm**). [3] The intention of the voluntary program is for all agencies and individuals engaged in open agricultural burning in Nevada to follow the requirements outlined in the *Agricultural* SMP. [1] The NDEP has central authority over the smoke management program. The NDEP s jurisdiction does not include Washoe or Clark Counties or any Bureau of Indian Affairs (BIA) trust lands. [2] The regulatory agency for the voluntary program is the NDEP or a locally established smoke coordination group. Either the NDEP or the local coordinating group, if established, may make burn/no burn decisions. [3]
3. Please describe the SMP. What are the requirements and general practices (voluntary guidelines, permits, generic	The Bureau of Air Quality is asking the agricultural community to voluntarily enter into a smoke management program very similar to that required of other burners. The HAB encourages best management practices and defines open burn notification requirements. Unlike the Nevada SMP, authorization may be through the NDEP or a

Smoke Management Program Component	State
	Nevada
permit-by-rule requirements, etc.)?	local smoke coordination group. Authorization is a two-step process: 1) Two weeks or more prior to the burn, the coordinator is provided with burn details consistent with the amount of smoke anticipated. 2) No later than 10 am of the business day preceding the burn, the burner must again notify the coordinator before receiving final approval. [3] The amount of information provided to the coordinator is tiered according to the smoke anticipated. Tables within the HAB divide open burns into four tiers based on acreage and vegetation. The tiers are consistent with those in the Nevada SMP but are expressed as acreage rather than Tons PM_{10}. The HAB also differs by defining tiers through daily emissions rather than total emissions. This consideration was given the agricultural community because their burns typically last one rather than multiple days. ~~**Tier 1** *(<1 Ton PM_{10})*: No requirements, but precautions should always be followed to prevent an escape;~~ **Tier 2** *(1 10 Tons (PM_{10}):* A one page variance form must be completed and the authorizing agency (State or Local) notified prior to burning; **Tier 3** *(10 25 Tons PM_{10} and located over 15 miles from a smoke sensitive area, a CO or PM non-attainment area, or a Class I area)*: All Tier 2 requirements plus a burn plan must be submitted and approved prior to burning. The burn plan must include the following: a) The specific location and description of the area to be burned; b) The responsible personnel; c) An emergency telephone number that is answered 24 hours a day; d) The property owner; e) The agency/contractor conducting the burn; f) The burn prescription; g) The number of acres to be burned, the type of fuel, fuel loading estimates and the ignition technique to be used; h) a list of agencies and private parties involved; I) A map depicting the potential impact of smoke; j) Discussion of public notification to be conducted; and k) Evaluation of alternative treatments; and **Tier 4** *(> 25 Tons PM_{10} or 10 tons if within 15 miles of a Class I area, a CO or PM non-attainment area, or other smoke sensitive area)*: All Tier 3 requirements plus: a) A smoke management plan including actions taken to minimize emissions before, during and after the fire; b) Emission estimates including models, methods, and emission factors used; c) Identification of smoke sensitive areas; d) Safety and contingency plans; e) A list of potential affected air regulators to be notified; and f) Air monitoring to be conducted. [1][2] *Continued on next page*
3. Continued	For prescribed fires emitting more than 10 tons of PM_{10} and within 15 miles of the state border, Bureau of Indian Affairs trust lands managed under the jurisdiction of a tribal air quality agency, or the borders of Washoe or Clark counties, the air regulators within these jurisdictions must be notified prior to the burn. The burn plan must list the agencies and individuals to be notified. [1]
4. How is information on the SMP or	The NDEP intends to distribute the HAB through the Nevada Department of Agriculture, Nevada Farm Bureau,

Smoke Management Program Component	State
	Nevada
other requirements disseminated to burners?	Nevada Cattlemen s Association, University of Nevada Cooperative Extension, Nevada Division of Forestry, Nevada Division of Conservation Districts, USDA Natural Resource Conservation Service, USDA Farm Service Agency and NDEP s web site. [3]
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	None established as yet. [3]
6. How is the program funded?	There are no additional sources of funding for the agricultural program. Anticipated funding for the Nevada SMP is through nonexempt burners and the Clean Air Act. A Memorandum of Understanding (MOU) and Interagency Agreement (IA) with the various land management agencies are being finalized. [3]
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	The Nevada SMP requires notification of other states/tribes/jurisdictions if within 15 miles of the border. At this time, the HAB makes no such requirement of agricultural burners. Agricultural burns authorized by the NDEP are coordinated with prescribed burning and wildland fires through the 24 hr notification system. The creation of local authorizing agencies is in development. At this time there is no requirement in the Nevada SMP that land managers contact local coordinating groups. [3]
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	The open burn variance form requires information such as location of the burn, acres to be burned, duration of burn, and materials to be burned. [1] Burn plans must include the following: the specific location and description of the area to be burned; the burn prescription; the number of acres to be burned, the type of fuel, fuel loading estimates and the ignition technique to be used; and a map depicting the potential impact of smoke. [1][2] *Continued on next page*
8. Continued	The Nevada SMP requires a report of the fire activity for the previous year if the agency emitted over 10 tons of PM_{10}. The an annual report is due by March 31 and must include: the permit number, the name of the individual conducting the burn or the agency name and contact, date and time ignition began, date and time the fire is declared out, actual acreage burned, fuel type, fuel loading, emissions estimates, emission factors used and their source, names of air quality regulators notified and the notification date, and the emission reduction techniques used. All permitted ignitions must be reported, even if they were not carried out. At this time, the HAB makes no such requirement of agricultural burners. [3]

Smoke Management Program Component	State
	Nevada
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	The annual acreage harvested in Nevada exceeds 500,000 acres of which, hay accounts for over 90%. Approximately 1200 questionnaires were mailed to members of the agricultural community to assess the annual agricultural acreage burned in Nevada. Of the 200 or more responses, 21,000 acres were burned to remove crop residue, 2,300 acres burned to clear ditches and fences and 3,700 acres to improve rangeland. The total acreage is 27,000 acres. [3]
10. What time of year is burning conducted for each major fuel type or crop?	The agricultural survey indicates that the majority of burns are in the spring and fall. [3]
11. What actions are required to minimize emissions from fire?	The Nevada SMP requires each land manager conducting prescribed burning to implement as many smoke management and emission reduction measures as are feasible for the specific burn. The following smoke management and emission reduction techniques are considered best management practices: 1) Reducing the biomass; 2) Burning in seasons characterized by meteorological conditions that allow for good smoke dispersion; 3) Using mass ignition techniques; 4) Igniting burns under good-to-excellent ventilation conditions and suspending operations under poor smoke dispersion conditions; 5) Considering smoke impacts on activities conducted by local communities and land users; 6) Burning only those fuels essential to meet resource management objectives; 7) Minimizing duff consumption and smoldering through fuel moisture considerations; 8) Minimizing dirt content when slash piles are constructed; 9) Burning piles when other burns are not feasible, such as in snow or rain; 10) Using all opportunities that meet the burn prescription and all burn locations to spread smoke impacts over a broader time period and geographic area; 11) Burning during optimum mid-day dispersion hours, with all ignitions in a burn unit completed by 3 p.m. to prevent trapping smoke in inversions or diurnal wind flow patterns; 12) Using chunking of piles and other consolidations of burning material to enhance fuel consumption and to minimize smoke production: 13) Implementing maintenance burning in a periodic rotation mimicking natural fire cycles to reduce excessive fuel accumulations and subsequent excessive smoke production through smoldering or wildfire; 14) Managing smoke impacts. [2] The HAB discusses burning dried fuel, burning hours and various ignition techniques. [3]
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	See question 11. The best management technique of managing smoke impacts includes: a) Limiting smoke impacts to roads, highways, and airports; b) Using appropriate signing if smoke will impact any point of public access; c) Notifying the public at potentially impacted smoke sensitive areas; d) Determining nighttime impacts and taking appropriate

Smoke Management Program Component	State
	Nevada
	precautions. [2] For projects that will emit more than 25 tons of PM_{10} or greater than 10 tons of PM_{10} if located within 15 miles of a Class I area, an area that is in non-attainment for CO or PM, or a smoke sensitive area, the burner must demonstrate that the project will not violate applicable ambient air quality standards. This demonstration will be conducted using currently accepted models. The model output will explicitly show conditions under which the burn will be conducted so as to minimize impacts of emissions. [2]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	See question 11. All open burns are to be conducted during daylight hours only. For best fire behavior and smoke dispersion, ignition should range from late morning to mid afternoon (9am - 3pm). [1] For small fires and fires that are remote enough to result in no noticeable impact on the public, visual monitoring of the direction of the plume and monitoring nuisance complaints by the public may be sufficient. [2] Other monitoring techniques include posting personnel on vulnerable roadways to look for visibility impairment and initiate safety measures for motorists; posting personnel at other smoke sensitive areas to look for smoke intrusions; using aircraft to track the progress of smoke plumes; and continued tracking of meteorological conditions during the fire. [2] For large fires expected to last more than one day, locating real-time particulate matter monitors at smoke sensitive areas may be warranted. [2]
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	Burn plans must include an evaluation of alternative treatments. [1][2]
15. Are the public notified of planned burning? If so, please describe how.	For any project generating more than 10 tons of PM_{10}, procedures for notifying the public of burn dates in smoke sensitive areas must be included with the applicant s burn plan. [1][2]
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	Should the cooperative efforts of the voluntary program fail and Nevada air quality diminish, the voluntary nature of the program could be forfeited. [1]
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	Yes. Visibility is discussed as an introduction to the HAB to apprise the agricultural community of State and Federal statutes and of developing regulations. Regional haze rules are currently being developed to address the visibility deterioration in our National Parks. The reduction in visibility is the result of regional haze caused by air pollutants such as PM_{10}, to be discussed later. [3]

Smoke Management Program Component	State
	Nevada
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	Agricultural burning is exempt from State open burn regulations and the program being developed is voluntary. [1][3]
Public Education	
19. Are there any public educational programs in place? If so, please describe.	The State has not developed a public education and awareness program. [3]
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	The SMP requires annual reporting for all organizations that emit more than 10 tons of PM_{10}. The Plan calls for land managers and air regulators to work together to assess program implementation and provide support. These are formalized under the MOU and an IA between the NDEP and land management agencies. The agreement is evaluated periodically to ensure implementation needs are met. The MOU and IA, providing support for the Smoke Management Plan, have not been approved. [2] The HAB provides flexibility for changes, as needed, to a program all Nevadans can tolerate. [3]
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	None.
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Mr. Curtis Payne, Nevada Division of Environmental Protection, (775) 687-4670 ext. 3083, **cpayne@ndep.carson-city.nv.us**.

Source of summary information:

[1] Smoke Management Program for the Lovelock Valley, Nevada, adopted May 28, 1991.

[2] Alan List, Smoke Management Program for the Lovelock Valley, Nevada; personal communication with Stephanie Walsh, EC/R Incorporated, on October 30, 2000, and comments dated December 4, 2000.

Special Note:

This survey was reviewed by the Lovelock Valley Smoke Management Program. For more information, contact Alan List, List Cattle Co., 2000 North Meridian Road, Lovelock, NV, 89419.

Smoke Management Program Component	Lovelock Valley Nevada
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	Agriculture is exempt from State open burn regulations except where prohibited by local ordinances or regulations. There is a voluntary Smoke Management Program for Lovelock Valley that has been followed since 1991. [1]
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	There is a voluntary Smoke Management Program for Lovelock Valley. The SMP was created by the Lovelock Valley Farmers Smoke Management Committee, which is comprised of both farmers and community members who continue to monitor its effectiveness. Farmers make their own burn/no-burn decisions. [1][2]
3. Please describe the SMP. What are the requirements and general practices (voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	Prior to burning, growers are asked to phone in their name, the date, the approximate time, the location, and the number of acres to be burned that day. This information is transcribed daily and kept as a permanent record. [1] Growers have agreed not to burn on Saturdays, Sundays, major holidays, or when there is a home football game scheduled. [1] Growers who are burning are asked to keep logs indicating weather conditions at the time fires are set. If sudden changes occur beyond the control of the responsible individual, these should be noted. [1] Growers have agreed: to burn only on days when the wind is blowing away from population centers and there is

Smoke Management Program Component	Lovelock Valley Nevada
	no low inversion or other problem climatic condition; to set no fires after 3:00 p.m. and to have all fires out by 6:00 p.m.; and to not burn seed fields to be plowed out. Ditch burning and general cleanup burning are exempt from the program. [1]
4. How is information on the SMP or other requirements disseminated to burners?	Each year a copy of the SMP is sent out to growers. An address list is obtained from the local extension office. Copies of the SMP are also given to elected officials and other interested individuals. [2]
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	No. [2]
6. How is the program funded?	Not applicable. [2]
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	No, although the State is developing a SMP which may be coordinated with the Lovelock Valley SMP. [2]
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	Prior to burning, growers are asked to phone in their name, the date, the approximate time, the location, and the number of acres to be burned that day. This information is transcribed daily and kept as a permanent record. [1] Growers who are burning are asked to keep logs indicating weather conditions at the time fires are set. If sudden changes occur beyond the control of the responsible individual, these should be noted. [1]
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	The primary materials burned are grain stubble and residue from alfalfa seed production. [2] Acres burned each year will vary. In 1998 growers burned 4,300 acres of grain stubble and 2,100 acres of alfalfa seed chaff. [2]
10. What time of year is burning conducted for each major fuel type or crop?	Grain stubble is primarily burned in August and September. Alfalfa seed residue is burned after grain stubble, but is usually completed by the end of September as well. [2]

Smoke Management Program Component	Lovelock Valley Nevada
11. What actions are required to minimize emissions from fire?	Growers have agreed not to burn seed fields to be plowed out. [1] No fires are set after 3:00 p.m., and all fires are out by 6:00 p.m. This causes fires to burn hotter and cleaner. There is rarely any smoke in the valley after sundown. [2]
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	Growers have agreed not to burn on Saturdays, Sundays, major holidays, or when there is a home football game scheduled. [1] Growers have agreed to burn only on days when the wind is blowing away from population centers and there is no low inversion or other problem climatic condition, to set no fires after 3:00 p.m., and to have all fires out by 6:00 p.m.. [1]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	Growers have agreed to burn only on days when the wind is blowing away from population centers and there is no low inversion or other problem climatic condition, to set no fires after 3:00 p.m., and to have all fires out by 6:00 p.m.. [1]
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	The growers have met to discuss alternatives to burning and have traveled to OR State University to look at alternatives. There is some composting occurring, and lots of straw is baled and sold. [2]
15. Are the public notified of planned burning? If so, please describe how.	Growers are asked to notify the sheriff s office when they plan to burn. Growers are also encouraged to notify neighbors if they will be effected by the burn. [2]
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	Pressure and encouragement to cooperate are used on individuals who violate the intent of the smoke management agreement. [1]

Smoke Management Program Component	Lovelock Valley Nevada
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	No. Normally there is not much of a haze problem in the area because of the geography. [2]
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	Pressure and encouragement to cooperate are used on individuals who violate the intent of the smoke management agreement. [1]
Public Education	
19. Are there any public educational programs in place? If so, please describe.	No. [2]
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	No. [1]
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	None
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Alan List, Lovelock Valley Farmers Smoke Management Committee, (775) 273-2197, **nlist1@listranch.lovelock.nv.us**.

Source of summary information:

[1] Oregon Administrative Rules, Department of Agriculture, Field Burning Rules, 603-077-0101 through 603-077-0195, **http://arcweb.sos.state.or.us/rules/OARS_600/OAR_603/603_tofc.html**.

[2] Oregon Revised Statutes, 1999 Edition, Air Pollution Control, Field Burning and Propane Flaming, 468A.550 through 468A.620, **http://landru.leg.state.or.us/ors/orschs-8.html**.

[3] WESTAR, Western States Agricultural Burning Survey, 1999.

[4] Oregon Department of Agriculture, Natural Resources Division, Smoke Management Program website, **http://www.oda.state.or.us/Natural_Resources/smoke.htm**.

[5] Oregon Department of Agriculture, Natural Resources Division, Smoke Management Program , Summary of the 1999 Field Burning Season, **http://www.oda.state.or.us/Natural_Resources/smoke_ov.htm#Field Burning Report**.

[6] Oregon Administrative Rules, Department of Environmental Quality, Pollution Control Tax Credits, 340-016-0005 through 340-016-0150, **http://arcweb.sos.state.or.us/rules/OARS_300/OAR_340/340_tofc.html**.

[7] Oregon Department of Forestry. Q & A; Frequently Asked Questions and Their Answers; Prescribed Burning, **www.odf.state.or.us/PUBAFF/ISSUES/preburn.html**.

Special Note:

This survey was reviewed by the Oregon Department of Agriculture. For more information, contact Patti Gentiluomo, Smoke Management Program, OR Department of Agriculture, 635 Capitol St. NE, Salem, OR, 97301-2532.

Smoke Management Program Component	**State**
	Oregon
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	Yes. It is the policy of the State to reduce the practice of open field burning while developing and providing alternative methods of field sanitation and alternative methods of utilizing and marketing grass seed and cereal grain straw residues, and to control, reduce, and prevent air pollution from agricultural burning by smoke management. [1][2] *Continued on next page*
1. Continued	The State regulates three types of agricultural burning: open burning, propane flaming (use of a mobile flamer device that utilizes an auxiliary fuel such that combustion is nearly complete and emissions are significantly

Smoke Management Program Component	State
	Oregon
	reduced), and stack burning (open burning of bound, baled, collected, gathered, accumulated, piled or stacked straw residue from perennial or annual grass seed or cereal grain crops). [1] (NOTE: When the term agricultural burning is used, it refers to open burning, propane flaming, and stack burning). The Environmental Quality Commission (Commission) by rule may prohibit, restrict or limit classes, types and extent and amount of burning for perennial grass seed crops, annual grass seed crops and grain crops. The Commission shall also adopt rules for the Willamette Valley counties which provide for a more rapid phased reduction by certain permit areas, the extent, type or amount of open field burning of perennial grass seed crops, annual grass seed crops, and grain crops, and the availability of alternative methods of field sanitation and straw utilization and disposal.[2] There is a Memorandum of Understanding between the OR Department of Agriculture (ODA) and OR Department of Environmental Quality (DEQ) that provides for the ODA to operate all of the field burning program. ODA may perform any function of the Commission of DEQ relating to the operation and enforcement of the field burning smoke management program. [2]
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	The Smoke Management Program (Program) within the ODA is responsible for overseeing agricultural burning of all perennial and annual grass seed residue and cereal grain residue within the Willamette Valley. [4] The Program is responsible for authorizing burning activities during the field burning season. From June 15th to September 30th, the Program issues open field burning releases to the fire districts and specifies the times, places, amounts, and other conditions for open field burning within the districts. During other times of the year the burn advisories are issued by the Department of Forestry. [1] [4]
3. Please describe the SMP. What are the requirements and general practices (voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	Open field burning is strictly regulated by the ODA in the Willamette Valley. Fees and permits are required. In two other regions of the state, open field burning is regulated by local county ordinance with DEQ oversight. [3] The Program is responsible for authorizing burning activities during the field burning season. From June 15th to September 30th, the Program issues open field burning releases to the fire districts and specifies the times, places, amounts, and other conditions for open field burning within the districts. During other times of the year the burn advisories are issued by the Department of Forestry. [4] *Continued on next page*
3. Continued	The Program announces marginal conditions are in effect and open field burning is allowed when the prevailing atmospheric dispersion and burning conditions are suitable for satisfactory smoke dispersal with minimum impact of the public, provided established limits and minimum conditions are satisfied. Burning hours are limited to those established by the Program each day and may be changed at any time when necessary to attain

Smoke Management Program Component	State
	Oregon
	and maintain air quality. [1] The Commission shall classify different types of atmospheric conditions as marginal conditions and specify the extend and types of burning that may be allowed under different combinations of atmospheric conditions. [2] Open field burning is prohibited on weekends during the July 1 through September 15 period upwind of Class I areas. There is an exception for weekend days when there is already natural visibility impairment present, such as clouds, fog, or rain. [4] There are three distinct limitations that apply to annual open field burning in the Willamette Valley. The regular limit requires burning not to exceed 40,000 acres annually. Propane flaming limitation is set at 37,500 acres. The identified species limitation includes only creeping red fescue, chewings fescue, and highland bentgrass. A special set aside of up to 25,000 acres is assigned to this limitation and steep terrain limitation each year after consultation with OR State University. The steep terrain limitation is included in the 25,000 acres of special set aside acreage, after species consideration. [1][4][8] Permits shall be issued and burning shall be allowed for the maximum specified acreage unless: the daily determination of suitability of meteorological conditions, regional or local air quality conditions or other burning conditions requires that a maximum number of acres not be burned on a given day; or if the Commission finds after hearing that other reasonable and economically feasible, environmentally acceptable alternatives to the practice of annual open field burning have been developed. The Commission may order a temporary cessation of all agricultural burning if it finds an extreme danger to public health or safety. [2] To provide for an efficient and equitable distribution of burning, daily authorizations of acreages are issued by the Program in terms of single or multiple fire district quotas. The Program establishes quotas for each fire district and may adjust the quotas of any district when conditions warrant such action. The Program gives first priority to the burning of perennial grass seed crops used for grass seed production, second priority for annual grass seed crop used for grass seed production, third priority to grain crop burning and fourth priority to all other burning. [1] Growers must register the acres they plan to open burn or propane flame each season. Registration must identify: the grower; the total number of acres available for each type of burning; UTM coordinates of the fields; county zone number the fields are located in; crop type; if the field is located in a priority area near a city, airport, or designated highway; and individual field acres. A cereal field can only be listed in the grower has completed the oath or affirmation section of the registration in which he/she promises that, if burned, a seed crop which requires flame sanitation will be planted on that land the following year. [1][2][4] *Continued on next page*
3. Continued	In addition to registering the acres they plan to burn, growers must: pay the appropriate fees; obtain burn permits from the local fire department; monitor the smoke management radio network for authorization/prohibition of burning; have an operating radio receiver and directly monitor the Program s burn schedule announcements at all times while open field burning; burn only specific fields and at specific times as identified by the Program; do any

Smoke Management Program Component	State
	Oregon
	special preparation required for the burn; have proper fire-fighting equipment on site prior to burning; execute burning in a timely manner; and extinguish fires by sunset or when directed by the Program. [1] [4] The Program encourages the preparatory burning of portions of selected problem fields to reduce or eliminate potential fire hazards and safety problems and to expedite the subsequent burning of the field. In no case shall such burning exceed five acres unless specifically authorized by the ODA. Each person conducting such burning shall employ backfiring burning techniques. The Program may also require special field preparations before burning, such as drying time or mechanical fluffing or residues. [1] [2] Propane flaming may be approved by the ODA if the field has been previously open burned or the field stubble flail-chopped, mowed, or otherwise cut close to the ground and the loose straw removed so the remaining stubble will not sustain an open fire. Unless otherwise restricted by the ODA, propane flaming may be conducted only between the hours of 9 a.m. and sunset between June 1 and August 31 of each year and 9 a.m. to hour before sunset between September 1 and October 14 of each year. Propane flamers shall be operated in overlapping strips, crosswise to the prevailing wind, beginning along the downwind edge of the field. Propane flaming is not allowed to result in a sustained fire. No propane flaming is allowed when either relative humidity exceeds 65 percent or the surface winds exceed 15 miles per hour or when State Fire Marshall conditions are in effect. Stack burning may be allowed if: the ODA has not prohibited such burning because of meteorological or air quality conditions; residue is dry and free of all other combustible and non-combustible material; a reasonable effort is made to promote efficient burning, minimize smoke emissions, and extinguish any stack burning which is in violation of any rule; it is not in any State Fire Marshal buffer zone non-combustible ground surface area (e.g., near certain designated roadways); and the acreage is permitted. [1]
4. How is information on the SMP or other requirements disseminated to burners?	From June 15th to September 30th, the Program issues general open field burning schedules over the radio system. The schedule specifies the times, locations, amounts, and other restrictions in effect for agricultural burning. [1][4] The Program maintains a web site. [4]
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	Rule interpretation, safety buffer zone inspections, problem resolution, and other information on the Program is available from the ODA. [4] No other information on burning training was available.
6. How is the program funded?	All fees collected are deposited in the State Treasury and are continuously appropriated to the ODA for the purpose of carrying out duties related to the field burning smoke management program. [2]
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is	There is a Memorandum of Understanding between the ODA and DEQ that provides for the ODA to operate all of the field burning program. ODA may perform any function of the Commission of DEQ relating to the operation

<table>
<tr><th>Smoke Management Program Component</th><th>State</th></tr>
<tr><td></td><td>Oregon</td></tr>
<tr><td>it coordinated with wildland and prescribed burning? If yes, please describe.</td><td>and enforcement of the field burning smoke management program. [2]
The OR Department of Forestry administers the state s SMP which regulates emissions from prescribed burning. [7]
No other information on program coordination was available.</td></tr>
<tr><td colspan="2">Emissions</td></tr>
<tr><td>8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?</td><td>Grower and field information from all registrations is entered into the Program s database. Registration information includes: the grower; the total number of acres available for each type of burning; UTM coordinates of the fields; county zone number the fields are located in; crop type; if the field is located in a priority area near a city, airport, or designated highway; and individual field acres. [4]
All open field burning is tracked for acres burned. [3]
Nephelometers (instruments which measures smoke levels by measuring the amount of light scattering that occurs when a beam of light is sent through an enclosed volume of air) have been set up by the DEQ in major population centers throughout the Willamette Valley. When readings are a certain degree hazier than the background level for a period of one hour, an hour of official smoke impact is recorded for that station. [4]</td></tr>
<tr><td>9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?</td><td>There is a legislated acreage phase-down that began in 1991 for open burning and propane flaming. In 1999, open burning was allowed on up to 40,000 acres plus 25,000 acres for steep terrain and certain species, and propane flaming was allowed on up to 37,500 acres. [5]

Open Field Burning [5]
Year — Burned Acres
1999 — 49,999
1998 — 46,299
1997 — 56,878
1996 — 76,417
1995 — 83,593

1999 Open Field Burn Crops [5]
Species — Burned — Percent of Total
Annual Ryegrass — 22,336 — 44.67
Cereal Grain — 789 — 1.58
Kentucky Bluegrass — 47 — 0.09
Highland Bluegrass — 1,140 — 2.28
Chewings Fescue — 9,772 — 19.54
Creeping Red Fescue — 5,075 — 10.15
Fine Fescue — 138 — 0.28
Orchardgrass — 17 — 0.03
Perennial Ryegrass — 6,584 — 13.17
Tall Fescue — 4,101 — 8.20</td></tr>
</table>

<table>
<tr><th>Smoke Management Program Component</th><th>State</th></tr>
<tr><td></td><td>Oregon</td></tr>
<tr><td></td><td>
Propane Flaming [5]
Year — Burned Acres
1999 — 1,939
1998 — 4,033
1997 — 2,921
1996 — 3,985
1995 — 4,145

1999 Propane Flame Crops [5]
Species — Burned — Percent of Total
Annual Ryegrass — 75 — 3.9
Kentucky Bluegrass — 31 — 1.6
Colonial Bentgrass — 7 — 0.4
Highland Bentgrass — 47 — 2.4
Creeping Red Fescue — 63 — 3.2
Perennial Ryegrass — 1,167 — 60.2
Tall Fescue — 549 — 28.3

Stack burning does not have an imposed acreage limitation.

Stack Burning [5]
Year — Burned Acres
1999/2000 — 3,825
1998/1999 — 5,021
1997/1998 — 7,628
1996/1997 — 7,535
1995/1996 — 14,078
</td></tr>
<tr><td>10. What time of year is burning conducted for each major fuel type or crop?</td><td>Burning usually begins in early July and continues through September or until the fall rains begin. There are no official beginning or ending dates. In a typical summer, more than 75% of the burning takes place on just 10 to 15 separate days. [4]</td></tr>
<tr><td>11. What actions are required to minimize emissions from fire?</td><td>Open field burning and propane flaming are prohibited in any area for one drying day (up to a maximum of four consecutive drying days) for each 0.10 inch increment of rainfall received per day at the nearest reliable measuring station; this requirement can be waived by ODA if dry fields are available. [1]
The ODA may require special field preparations before burning, such as but not limited to, mechanical fluffing of residues, when conditions in its judgement warrant such action. [1]
Each burner is required to make every reasonable effort to expedite and promote efficient burning and prevent excessive emissions of smoke by: meeting all of the State Fire Marshall requirements specified in OAR 837-110-0040 through 837-110-0080; ensuring field residues are evenly distributed, dry, and in good burning condition; and employing rapid ignition techniques on all acreage where there are no imminent fire hazards or public safety concerns. [1]</td></tr>
</table>

Smoke Management Program Component	State
	Oregon
	Propane flaming rules require that field stubble must be flail-chopped, mowed, or otherwise cut close to the ground and loose straw removed so that the remaining stubble will not sustain an open fire. No person shall cause or allow propane flaming which results in sustained open fire. [1] Burners who are stack burning are required to make every reasonable effort to promote efficient burning, minimize smoke emissions, and extinguish any stack burning which is in violation of any rule. [1]
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	The Program will only allow burning when, in its best judgement, the prevailing atmospheric dispersion and burning conditions are suitable for satisfactory smoke dispersal with minimal impact on the public. Upon finding extreme danger to public health or safety, the Commission or ODA may order a temporary cessation of all open field burning in any area of the Willamette Valley. [1] Priority acreage is any acreage within a designated priority area around a smoke sensitive city, highway, or airport. Open field burning in priority areas is handled the same as in regular areas except that a permit would not be issued if the prevailing winds will blow across the adjacent city, airport, or highway. [1] [4] The Program may designate additional areas as priority areas when conditions in its judgement warrant such action. [1] No south Valley acreage shall be burned upwind of the Eugene-Springfield non-attainment area. [1]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	Burning is only allowed under marginal conditions, when atmospheric conditions such that smoke and particulate matter escape into the upper atmosphere with some difficulty but not such that limited additional smoke and particulate matter would constitute a danger to the public health and safety. [1] [2] The following information is obtained on a continual basis by the Program during the field burning season and is presented in the chronological sequence used in the daily decision process: analysis of national Weather Service (NWS) observations of the upper level temperatures, moisture and stability; an hourly analysis of a plotted chart of surface weather observations; an integration of the above local analyses with NWS analysis/computer products; a forecast of the hourly surface temperatures and relative humidities expected during the day; direct observations of wind speed and direction from the surface to 10,000 feet by pilot balloon at two locations; airborne weather observations to include a measured sounding of temperature and pressure from near the surface to 8,000 feet; and aerial and ground observations of test fires. [4] No open field burning is allowed in any area with a ventilation index less than 10 or in any area upwind, or in the immediate vicinity, of any area in which a violation of federal or state air quality standards is projected to occur. [1] Permits shall be issued and burning allowed for the maximum acreage specified unless the daily determination of

Smoke Management Program Component	State
	Oregon
	suitability of meteorological conditions, regional or local air quality conditions or other burning conditions requires that a maximum number of acres not be burned on a given day, or the Commission finds that other acceptable alternatives have been developed. [2]
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	The Commission is required to establish standards of practice and performance for agricultural burning and certified alternative methods to open field burning. [2] Permits shall be issued and burning allowed for the maximum acreage specified unless meteorological conditions are unsuitable or if the Commission finds that other reasonable and economically feasible, environmentally acceptable alternatives to the practice of annual open field burning have been developed. [2] There is a tax credit available for using alternatives to open field burning. It is available to facilities that reduce or eliminate: open field burning and may include equipment, facilities, and land for gathering, densifying, handling, storing, transporting and incorporating grass straw or straw based products; air quality impacts from open field burning and may include propane burners or mobile field sanitizers; or grass seed acreage that requires open field burning. The facility may include: production of alternative crops that do not require open field burning; production of rotation crops that support grass seed production without open field burning; or drainage tile installations and new crop processing facilities. [6]
15. Are the public notified of planned burning? If so, please describe how	No.
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	The SMP is not voluntary.
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	Open field burning is prohibited on weekends during the July 1 through September 15 period upwind of Class I areas. There is an exception for weekend days when there is already natural visibility impairment present, such as clouds, fog, or rain. [4]
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	Enforcement actions can include: notices of noncompliance, notices of civil penalty assessment, and orders. The ODA may also seek legal or equitable remedies. There is a matrix for determining the amount of the civil penalty, depending on the magnitude of the violation. No civil penalty may be less than $50 or more than $10,000 for each day of each violation. Additional civil penalties may be issued for: (a) violating the requirement to plant the

Smoke Management Program Component	State
	Oregon
	burned acreage that has undergone open burning with seed crops other than cereal grains which require flame sanitation for proper cultivation ($25 for each acre planted contrary to the restrictions), and (b) for intentionally or recklessly violating agricultural burning rules, resulting in or creating the imminent likelihood for an extreme hazard to the public health or which causes extensive damage to the environment (penalty up to $100,000). [1]
Public Education	
19. Are there any public educational programs in place? If so, please describe.	The Program maintains a web site. [4]
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	The State periodically revises the Willamette Valley open field burning program to make smoke management improvements. The State also oversees county-operated open field burning smoke management programs and will recommend improvements when necessary. [3]
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Patti Gentiluomo, Smoke Management Program, OR Department of Agriculture, (503) 986-4701. Suzi Pettey, Permitting and Registration Coordinator, OR Department of Agriculture, (503) 986-4794. John Hamblin, Field Burning Inspector, OR Department of Agriculture, (503) 986-4776, **jhamblin@mh.oda.state.or.us**.

Source of summary information:

[1] Jefferson County, OR, Ordinance No. 0-65-98, Smoke Management Ordinance - 1998.

[2] Bobbie McConkey, Jefferson County Smoke Management Program; personal communication with Stephanie Walsh, EC/R Incorporated, on October 26 and Nov9/ember 2, 2000.

Special Note:

This survey was reviewed by the Jefferson County Smoke Management Program. For more information, contact Bobbie McConkey, Jefferson County Fire Department, P.O. Box 30, Madras, OR, 97741.

Smoke Management Program Component	Jefferson County Oregon
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	Regulations for agricultural burning are established in the County s Smoke Management Ordinance. [1]
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	Yes. The Jefferson County Smoke Management Program was established by County ordinance and is administered by the Smoke Management Program Center (Center). [1] During the smoke management season (July 25 through September 20), the Center collects meteorological data each day and faxes it to the Department of Environmental Quality (DEQ) in Salem, OR. A meteorologist in Salem examines the data and provides the Center with more information with which it can make the burn/no-burn decision. [2] Outside of smoke management season there is very little burning. Burning is only allowed on Mondays through Fridays. The burner must call the local fire department to get permission to burn. The decision whether to allow burning is based only on fire-safety considerations, not on smoke management conditions. [2]
3. Please describe the SMP. What are the requirements and general practices (voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	Fire permits must be obtained from the appropriate fire protection agency before any open field burning is conducted. [1] Fields must be pre-registered with the Center between July 1 and July 20, and appropriate fees must be paid. Field sizes and locations shall be provided at the time registered. Acres registered after the pre-registration period must be registered before burning at a fee of 10% above the pre-registration fee. All applications must be made by

Smoke Management Program Component	Jefferson County Oregon
	October 31. [1] Once a fire permit is obtained, no field burning may be conducted until specific field authorization is obtained from the Center. [1] Daily authorization must be obtained by calling the appropriate fire protection agency before any open burning is conducted. Information given at that time shall include: (1) date of the authorization and time of issuance; (2) field(s) location and size; (3) any fire safety requirement specified by the state fire marshal s rules, i.e., extinguishment capability, establishing fire guards, safe burning techniques, etc.; (4) a burn completion time for each field to be burned; and (5) a 150 minute limit after authorization issuance to commence burning of the field. [1] Open burning shall be allowed when atmospheric dispersion and burning conditions are favorable for optimal smoke dispersal. (For more detail, see Question #13). Once the determination has been made that favorable conditions exist for burning, a test fire may be conducted to verify that such conditions actually exist. [1] All open field burning shall be conducted in a manner which minimizes smoke impact on the public and promotes safe burning practices. No open field burning is allowed if the State Fire Marshall has prohibited burning because of high fire danger considerations. [1] A 2:00 p.m. re-evaluation shall be made each day. All growers must have permits revalidated at this mid-day point. If burning has not been completed, failure to revalidate shall constitute a violation of the ordinance. All open field burning shall be completed by 5:00 p.m. [1] Open field burning is not allowed on weekends or holidays. [1] Mint slug burning may be conducted only be permit issued by the OR Department of Environmental Quality (DEQ). [1] No open field burning is allowed during air stagnation periods designated by the National Weather Service or during likely periods of non-compliance with National Ambient Air Quality Standards. [1] *Continued on next page*
3. Continued	Propane flaming on grass seed and cereal grain acreage is allowed only if the field has been recently open burned. Propane burning of grass is allowed on add days except Sundays and holidays. Propane burning of grass is not permitted on Saturdays with poor winds or dispersal. No propane burning is allowed after 6:30 p.m. on any day. At the discretion of the Smoke Management Coordinator (Coordinator), first year grass fields and grass fields that have a light load of residue and will not carry a flame without assistance may be propane flamed on a day when no open burning is permitted. This type of burning is not permitted on weekends or holidays. [1] Rapid ignition techniques are encouraged on all acreage where there are no imminent fire hazards or public safety concerns. [1]

Smoke Management Program Component	Jefferson County Oregon
	Each person open field burning shall attend the burn until it is effectively contained. [1]
4. How is information on the SMP or other requirements disseminated to burners?	All burners have a copy or receive a copy of the Smoke Management Program ordinance when they apply for a permit. [2]
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	There is not burner training. Most farmers in the area have been burning fields for many years and have learned through hands-on experience. [2]
6. How is the program funded?	The program is funded through permit fees. [1][2]
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	No. There are no other smoke management programs around Jefferson County. Occasionally the State will request the County have a no-burn day if the threat of wildfires is high and smoke from agricultural burning would make it difficult for fire-watchers to identify wildfires. [2]
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	At the end of the field burning season, the following information is compiled and reported to the DEQ: daily acreage burned; daily meteorology on each burn day; daily smoke impacts in Bend, Redmond, Madras, and any federal Class 1 area (extent, duration, and severity of smoke impact); and daily public complaints (location and observation of complaint). [1]
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	During the 2000 burning season, approximately 7,036 acres of grass and 3,600 acres of grain were burned. [2]
10. What time of year is burning conducted for each major fuel type or crop?	The smoke management season is from July 25 through September 20. [1]
11. What actions are required to	Rapid ignition techniques are encouraged on all acreage where there are no imminent fire hazards or public

Smoke Management Program Component	Jefferson County Oregon
minimize emissions from fire?	safety concerns. [1]
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	Open field burning shall be prohibited under poor smoke dispersal conditions, or when the mixing height is 1500 or lower. A test fire may be used to calculate mixing height may be used. No open field burning, including test fires, are allowed when prevailing winds indicate smoke transport towards Bend, Redmond, Madras, Sisters, Crooked River Ranch, or any federal Class 1 area. [1] A 2:00 p.m. re-evaluation shall be made each day. All growers must have permits revalidated at this mid-day point. If burning has not been completed, failure to revalidate shall constitute a violation of the ordinance. All open field burning shall be completed by 5:00 p.m. [1] All open field burning shall be conducted in a manner which minimizes smoke impact on the public and promotes safe burning practices. [1] Open field burning is not allowed on weekends or holidays. [1] No open field burning is allowed during air stagnation periods designated by the National Weather Service or during likely periods of non-compliance with National Ambient Air Quality Standards. [1]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	Determination of optimal smoke dispersal conditions shall be made at the Center based on the following factors: (1) morning weather forecast and discussion with the National Weather Service about anticipated weather conditions for the County, such as afternoon surface and upper-level wind direction and speed, high temperature, and lowest relative humidity; (2) temperature sounding from local aircraft taken in the morning and approximately one hour prior to the anticipated start of burning; (3) calculated maximum mixing height for each day; (4) upper-level transport wind direction and speed as determined by the pilot balloon readings taken at the Center; (5) surface level winds, based on wind monitoring equipment at the Center, the Redmond Airport, and locations in Jefferson County; and (6) air quality conditions in Jefferson County as determined by the DEQ or other monitoring instruments. [1] Once the determination has been made that favorable conditions exist for burning, a test fire may be conducted to verify that such conditions actually exist. [1] Open field burning shall be prohibited under poor smoke dispersal conditions, or when the mixing height is 1500 or lower. A test fire may be used to calculate mixing height may be used. No open field burning, including test fires, are allowed when prevailing winds indicate smoke transport towards Bend, Redmond, Madras, Sisters, Crooked River Ranch, or any federal Class 1 area. [1] No open field burning is allowed during air stagnation periods designated by the National Weather Service or during likely periods of non-compliance with National Ambient Air Quality Standards. [1]

Smoke Management Program Component	Jefferson County Oregon
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	There is no formal process for considering alternatives to fire. There is some informal incentive for considering alternatives to fire, in that the farming community knows that if smoke becomes a problem, the State may step in and regulate them and they do not want that to happen. The farming community is aware of smoke management issues and has adopted and/or changed its practices over the years resulting in fewer acres being burned. [2]
15. Are the public notified of planned burning? If so, please describe how.	No. [2]
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	The SMP is not voluntary.
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	No open field burning, including test fires, are allowed when prevailing winds indicate smoke transport towards Bend, Redmond, Madras, Sisters, Crooked River Ranch, or any federal Class 1 area. [1]
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	The Coordinator is responsible for providing observations of field burning activity to the Center, including the extent, duration, and severity of smoke impacts. The Coordinator investigates any potential violations of the ordinance and has the authority to issue notices of non-compliance. [1] Penalties for violations of the ordinance are: [1] $500 Burning without first obtaining a permit; burning without specific authorization from the Center; $250 Open burning more acres than authorized; failure to comply with burn completion time; $100 Burning acreage for which a burning fee was not paid; leaving a burning field before it is effectively contained; Not less than $50 nor more than $1000 for any other violation of the ordinance; Fines are automatically doubled for any recurring violation of the ordinance. Violators are cited into the Jefferson County Circuit Court. [1]
Public Education	
19. Are there any public educational	There are a few articles about burning in the newspaper each summer. [2]

Smoke Management Program Component	Jefferson County Oregon
programs in place? If so, please describe.	
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	The DEQ keeps a log of smoke-related complaints. [2]
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	None.
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Bobbie McConkey, Jefferson County Smoke Management Program, (541) 475-7274, **bmc@madras.net**.

Source of summary information:

[1] Umatilla County Smoke Management Ordinance No. 99-08.
[2] Umatilla County Smoke Management Permit Information Brochure and Permit Form.
[3] Umatilla County Burn Permit Information Sheet and Permit Form.
[4] Patty Perry, Umatilla County Department of Resource Services and Development; personal communication Barbara Bauer, EC/R Incorporated, July 20, 2000, and comments received on December 4, 2000.

Special Note:

This survey was reviewed by the Department of Resource Services and Development, Umatilla County Land Use Planning. For more information, contact Patty Perry, Union County, 216 S.E. 4th Street, Pendelton, OR 97801.

Smoke Management Program Component	Umatilla County Oregon
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	Yes, County Ordinance No. 99-08 gives the Umatilla County Planning Department (Planning) authority to issue smoke management permits and administer a permit program. [1]
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	Yes, County Ordinance No. 99-08 gives Planning the authority to issue smoke management permits and administer the smoke management permit program. The smoke management permit acts as the burn permit. [1] [4] Umatilla County makes a daily Burn/No Burn determination. [1]
3. Please describe the SMP. What are the requirements and general practices (voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	Anyone in the County who plans to do any open field burning of areas two acres or larger or open burning in commercial orchards needs to obtain a smoke management permit (The Umatilla Indian Reservation, and lands protected by the Oregon Department of Forestry are excluded from this requirement.). The permit holder is required to conduct open burning only on days designated as Burn Days. A new permit must be obtained each year. [2]

Smoke Management Program Component	Umatilla County Oregon
	On the day of the intended burn, the burner must call a phone number to see if it is an allowable Burn Day. [1]
4. How is information on the SMP or other requirements disseminated to burners?	Planning has a smoke management permit information brochure available for burners. [2] A toll free telephone number gives information on Burn/No Burn days. [4]
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	No. [4]
6. How is the program funded?	To support the cost of administering the program, a smoke management permit fee of $25 is charged. [4]
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	A Smoke Management Committee (Committee) coordinates implementation of Ordinance No. 99-08 with the various fire districts and city fire departments and with regional fire protection and control institutions, such as but not limited to, the Tribal Fire Department and the Area 9 Fire Defense Board. [2] Federal, State and Tribal lands are exempt from the County Ordinance. No coordination currently occurs with the agencies that control these lands. [4]
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	Planning maintains a written record of all permits issued, including any conditions or restrictions that are placed on the use of the permits. Permits and data on acreage, types, locations, etc. is logged into a computer permit tracking system. [4]
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	Statistics are not available since the program is new. [4]
10. What time of year is burning conducted for each major fuel type or crop?	Generally, burning occurs in the Spring and Fall, but burning season also depends on the crop and planting season. [4]
11. What actions are required to minimize emissions from fire?	None. [4]

Smoke Management Program Component	Umatilla County Oregon
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	No burning is allowed if the wind speed exceeds 20 miles per hour and are discouraged from igniting fires when wind speeds exceed 15 miles per hour. Burning may be suspended if temperatures rise about 95 degrees F or humidity falls below 20%. [3] No burning allowed before 7:30 A.M. or after two hours before sunset. All open flame must be extinguished no later than one hour after sunset, including smoldering piles of materials. [3] No burning allowed on No Burn Days. [1] Open burning is more strictly regulated on designated Haze Reduction Days as established by the Committee. [1] No open burning allowed withing a radius of three miles of an event site such as the Umatilla County Fair. [1] Open burning must be conducted in a manner that reasonably minimizes the likelihood the smoke emitted will create unsafe driving conditions on nearby roads and highways. [1]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	Daily determination of the Burn/No Burn designation is made using data concerning weather conditions that are favorable for smoke dispersal. [1] A No Burn Day is declared on air stagnation days designated by the National Weather Service or which might unreasonably impact periods of noncompliance with National Ambient Air Quality Standards for a local community, considering the meteorological and other ambient air conditions. [1]
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	The State Agricultural Extension Offices, the soil and Water Conservation District and the Natural Resources Conservation Service work with the growers to develop alternatives to burning. [4]
15. Are the public notified of planned burning? If so, please describe how.	Burners are required to notify the their local fire district. [4]
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	Not applicable.

Smoke Management Program Component	Umatilla County Oregon
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	Open burning is more strictly regulated on designated Haze Reduction Days. Haze Reduction Days are days such as holidays or event days, as determined by the Committee, that require a higher standard for smoke dispersal before being designated with Burn Day status. [1]
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	Yes, the base penalty for open burning without a Smoke management permit is $500. The base penalty for burning on a designated No Burn Days is also $500. The base penalty for failure to properly report an intended burn to Umatilla County is $100. Penalties increase with each subsequent violation of the smoke management ordinance. [2] A habitual offender may lose their current permit and be denied any further smoke management permits. [1] Violations may be reported to the Department of Environmental Quality (DEQ) and be subject to further penalties under the DEQ enforcement procedures and civil penalties provisions. [1]
Public Education	
19. Are there any public educational programs in place? If so, please describe.	State agencies have some public education programs, but they are not specific to burning. [4]
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	At least once a year, as appropriate, the Committee recommends improvements to Ordinance No. 99-08 and the Operating Plan to the Board of Commissioners for possible adoption into the Ordinance. [1]
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	None.

Smoke Management Program Component	Umatilla County Oregon
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Patty Perry, Umatilla County Department of Resource Services and Development, 216 S.E. 4th Street Pendleton, OR 97801, 541-276-6249, **pattyp@uma1.co.umatilla.or.us**.

Source of summary information:

[1] Union County Ordinance No. 1992-4, Controlling and Managing Field Burning in Union County, Oregon and Creating a Union County Smoke Management Program.

[2] Sam Royes, President Union County Seed Growers; Memorandum to Union County Farmers, dated July 5, 2000, regarding policies for the 2000 field burning season.

[3] Ruth Zemke, Smoke Management Office, Imbler Rural Fire Protection District; Memorandum to Barbara Bauer, EC/R Incorporated, dated July 21, 2000.

[4] Ruth Zemke, Smoke Management Office, Imbler Rural Fire Protection District; personal communication with Barbara Bauer, EC/R Incorporated, November 8, 2000 and December 8, 2000.

Special Note:

This survey was reviewed by the Smoke Management Office, Imbler Rural Fire Protection District. For more information, contact Ruth Zemke, 180 Ruckman Avenue, P.O. Box 269, Imbler, OR, 97841.

Smoke Management Program Component	Union County Oregon
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	Yes, Union County Ordinance 1992-4 regulates open field burning. [1]
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	Yes, County Ordinance 1992-4 establishes a formal smoke management program (SMP). [1] The County contracts with the Union County Grass Seed Growers Association to implement the smoke management program operations. All field burning fees are used to fund the Smoke Management Office (SMO) operations located at the Imbler Rural Fire Protection District ((Imbler) which makes the daily Burn/No Burn decision. [1][3]
3. Please describe the SMP. What are the requirements and general practices	Growers are required to sign up fields for burning before the burning season begins (by July 15th). Growers wishing to obtain a permit to burn can call the SMO on the day they wish to burn. Growers provide the following

Smoke Management Program Component	Union County Oregon
(voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	information: field type and size, type of burn, and growers name and address. The permit may be issued at that time or the grower may be informed of how many fields are ahead of his for obtaining a permit. The permittee will have 60 minutes to begin lighting the fire. Before lighting the fire, the permittee must call back to the SMO to obtain final approval no more than 30 minutes before lighting. Final approval may be obtained in person, over the phone or by two-way radio. [1][3] Fields are burned as called in, until there is a backup on the list. AS the list back up, each person can burn approximately 160 acres before they drop to the bottom of the list and have to work their way back up. [2]
4. How is information on the SMP or other requirements disseminated to burners?	The Union County Seed Growers keeps Union County growers informed of the policy, any policy changes and new regulations that may effect the burners. [3] The burn list, which is updated daily, is posted at the SMO so growers will know where they are on the list. [2]
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	No. [4]
6. How is the program funded?	All open field burning in the County is subject to a burning fee for each acre burned. The amount of the fee is determined by the Union County Grass Seed Growers Association prior to the start of each field burning season. The fee is based on a budget projection of the estimated revenue necessary to cover the program operating expenses. [1] For the 2000 field burning season $2 per acres was charged for all acres burned. [2]
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	The Smoke Management Office coordinates with State Forestry during times of wildland or forest fires. If there is a need to fly retardant planes from the LaGrande Airport, burning may be suspended in the entire valley or just in the flight plan area for safety reasons. [4] During periods of extreme temperatures and dry conditions, State Forestry may ask that open burning be suspended within one mile or more of forested areas. [4]
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	On or before December 1 of each year the following information is assembled and reported to the Department of Environmental Quality: 1) Daily acreage burned. 2) Daily meteorology on each burn day. 3) Daily smoke impacts in La Grande and the Eagle Cap Wilderness Area. 4) Daily public complaints. 5) Total amount of fees collected. 6) A summary of enforcement action taken. [1]

Smoke Management Program Component	Union County Oregon
	At the end of each day a report is written on the happenings of the day. [3]
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	Acres burned statistics for 2000 are as follows: 3757.20 grass seed stubble open burned, 3751.70 grass seed stubble propane burned, 1613.20 grain stubble open burned. Total acres burned = 9122.10. [4]
10. What time of year is burning conducted for each major fuel type or crop?	Field burning generally occurs from July 15 through September 30 for all crops. [1]
11. What actions are required to minimize emissions from fire?	Rapid ignition techniques are encouraged. [1]
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	Open field burning is prohibited under poor smoke dispersal conditions or when the mixing height is 1500 feet or lower. [1] Open field burning is prohibited (including test fires) if the prevailing winds indicate smoke transport directly toward the La Grande PM10 nonattainment area or the Eagle Cap Class I wilderness area. [1] All open field burning must be conducted in a manner which minimizes smoke impact on the public. [1] Open field burning is prohibited during air stagnation periods or during likely period of noncompliance with the National Ambient Air Quality Standards. [1]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	Open field burning is allowed only when the prevailing atmospheric dispersion and burning conditions are favorable for optimum smoke dispersal based on the following factors: 1) Weather forecast from and discussion with the National Weather Service office in Pendleton. 2) Temperature sounds from local aircraft taken in the morning. 3) Calculated maximum mixing height for each day. 4) Upper-level transport wind direction and speed determined by pilot balloon readings. 5) Surface level winds based on monitoring. 6) Observations of visibility and potential smoke impacts from the Point Prominence Lookout station. [1] conditions are monitored throughout the day. If conditions change to unfavorable, permits will not be issued and final approval of previously issued permits will be denied. [2] It is policy not to burn if the temperature is above 95 degrees F and the humidity is below 15%. [3] Open field burning is prohibited (including test fires) if the prevailing winds indicate smoke transport directly toward the La Grande PM10 nonattainment area. [1]

Smoke Management Program Component	Union County Oregon
	The field inspector has a portable weather gauge which he carries with him and can check any area at any time. This allows him to know the temperature, wind speed and humidity where ever he is. Since different areas of the County can have entirely different weather conditions this has proven to be a part of the success of the program. [3].
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	The Oregon Department of Agriculture has done some research into alternatives to burning. [4] Growers use the information from the Oregon Department of Agriculture in determining the method and frequency of burning. In 2000, approximately 56% of total grass acres had some form of burning, the remaining 46% were untouched by flame and other methods were used. [4]
15. Are the public notified of planned burning? If so, please describe how.	No. [4]
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	Not applicable.
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	Open field burning is prohibited (including test fires) if the prevailing winds indicate smoke transport directly toward the Eagle Cap Class I wilderness area. [1]
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	For violation of the County Ordinance the following fines and penalties apply: 1) $500 for burning without a burn permit. 2) $250 for burning more acres than authorized. 3) $100 for burning acreage for which a burning fee was not paid. 4) Not less than $50 nor more than $1000 for any other violation. 5) An automatic doubling of each fine for any reoccurring violation per season. [1]
Public Education	
19. Are there any public educational programs in place? If so, please describe.	No. [4]

Smoke Management Program Component	Union County Oregon
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	Each year, the Union County Seed Growers issues policies and addresses any corrections identified in the previous year or any new legislation. [3]
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	None.
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Ruth Zemke, Smoke Management Office, Imbler Rural Fire Protection District, 180 Ruckman Avenue, P.O. Box 269, Imbler, Oregon 97841, (541) 534-6625. Steve McClure, Union County Commissioner, 1106 K Avenue, La Grande, Oregon 97850, (541) 963-1001.

Source of summary information:

[1] Smoke Management Program. Available at **http://www.oda.state.or.us/Natural_Resources/smoke.htm.**

[2] Summary of the 1999 Field Burning Season.

[3] Suzi Pettey, Department of Agriculture, Natural Resources Division, Smoke Management Program; personal communication with Barbara Bauer, EC/R Incorporated, July 24, 2000 and November 7, 2000, and comments received on December 8, 2000.

[4] Oregon Field Burning Smoke Management Program Operational Guidelines.

Special Note:

This survey was reviewed by the Oregon Department of Agriculture, Natural Resources Division, Smoke Management Program. For more information, contact Suzi Pettey, 635 Capitol Street NE, Salem, OR, 97301-2532.

Smoke Management Program Component	Willamette Valley Oregon
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	Yes, the Oregon Department of Agriculture (ODA), in coordination with the Oregon Environmental Quality Commission (DEQ), have the authority to regulate open field burning and serve as the principal rule making body. The regulations apply to burning of grass seed and cereal grain residue and acreage in the Willamette Valley (areas lying between the crest of the Coastal Range and the crest of the Cascade Range in these counties: Benton, Clackamas, Lane, Linn, Marion, Multnomah, Polk, Washington and Yamhill). [1][3] All other types of agricultural burning are regulated by the DEQ. [3]
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	Yes, the ODA administers the open field burning rules by conducting the smoke management program (SMP) through the Smoke Management Office (SMO). [1] The SMP is a cooperative effort involving the ODA, Department of Environmental Quality (DEQ), the Oregon Seed Council, approximately 60 local fire protection districts and nearly 800 grass seed growers. [1]
3. Please describe the SMP. What are the requirements and general practices (voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	The SMP includes the following elements: 1) Coordinating, registering and issuing of first phase permits. 2) Authorizing burning during field burning season. 3) Providing weather forecasting and ground/aerial surveillance service. (Aerial surveillance was not analyzed for 2000 due to the phasedown on the amount of burning. [3]) 4) Monitoring acreage burned and receiving fees collected by permit agents. 5) Assisting fire districts in

Smoke Management Program Component	Willamette Valley Oregon
	administering burning programs. 6) Administering te pollution control tax credit program. 7) Enforcing rules governing open field burning, propane flaming and stack burning. 8) Managing the research and development program. [1] Without exception, every field of grass seed or cereal grain residue to be open field burned or propane flamed in the Willamette Valley must first be registered with and approved by the ODA. Registration is essentially a permit application that identifies the grower and each field. [1] A permit is required to burn any grass seed or cereal grain field or residue in the Willamette Valley. Permits for open field burning or propane flaming are issued by the permit agent for specified fields and for stack burning for specified locations on the day of the burn, in exact accordance with the times, places, amounts, burn type and other provisions and limitations announced by ODA. [1] Radio broadcasts are the means by which information regarding releases is distribute directly to growers for specified areas and time periods. All holders of validated permits must continuously monitor and burn in compliance with radio advisories. [4]
4. How is information on the SMP or other requirements disseminated to burners?	The SMP web site is available. The site includes information on the program, staff contact numbers, factors to consider during the field burning season and other information for burners. [1] Radio broadcasts are the means by which information regarding releases is distributed directly to growers for specified areas and time periods. [4]
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	No. [3]
6. How is the program funded?	Grower fees fund the smoke management program. Growers pay a $2 per acre fee to register fields for open field burning and $8 per acre to burn. Propane flaming registration is $1 per acre and $2 per acre to propane flame. Stack or pile burning requires a $6 per acre burn fee. [1][3]
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	The ODA SMP is for the Willamette Valley only. All other types of agricultural burning are regulated by the DEQ who, in some cases, coordinates with other agencies, including the Tribes. [3] Weather forecasters occasionally share burning information with State Forestry, usually after burning has finished, to determine whose smoke impacted what areas. [3]
Emissions	

Smoke Management Program Component	Willamette Valley Oregon
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	Grower and field information from all registrations is entered into an ODA database. Grower information identifies the grower registrant. Field information includes: 1) the total number of acres available for open field burning. 2) The total number of acres available for propane flaming. 3) UTM coordinates of the fields. 4) County zone number the fields are located in. 5) Crop type. 6) If the field is located in a priority area near a city, airport, or designated highway. 7) individual field acres. [1]
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	1999 Open Field Burn Crop (in acres): [2] Species / Field Burned / Propane Flame Burned / Stack Burning Annual Ryegrass 22336 / 75 Cereal Grain / 789 Kentucky Bluegrass / 47 / 31 Highland Bentgrass / 1,140 / 47 Chewings Fescue / 9,772 Creeping Red Fescue / 5,075 / 63 Fine Fescue / 138 Orchardgrass / 17 Perennial Ryegrass / 6,584 / 1167 Tall Fescue / 4,101 / 549 Colonial Bentgrass / / 7 Total Acres / 49999 / 1939 / 4500
10. What time of year is burning conducted for each major fuel type or crop?	For the crops listed in Question 9, burning is generally conducted from June 15th to October 15th. [3] Dry stack burning is conducted year-round which minimizes or lessens smoke impact from June 15th to October 15th. [3]
11. What actions are required to minimize emissions from fire?	Fields must be dry. Growers fluff residue and cut the regrowth prior to burning. [3] Preparatory burning, to make the field both safe and more easily ignited when the opportunity becomes available. The faster a field is lit, the less ground smoke is produced. [3] Regrowth can become a problem between harvest time and burning time if it exceeds 9 inches. Then ODA requests the grower cut and fluff the new straw load. [3] Removing the straw load by some means, like baling, reduces the straw load and leads to poor burning results, slow burn rate, and more ground level smoke. [3]

Smoke Management Program Component	Willamette Valley Oregon
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	All fires should be out at fires-out time; any active flames, and major sources of smoke should be extinguished with water. [1] A permit for field burning in priority areas (any acreage within a designated area around a smoke sensitive city, highway, or airport) will not be issued if the prevailing winds will blow across the adjacent city, airport or highway. [1] Burning is always prohibited unless marginal conditions are announced by ODA. When conditions are appropriate to burn and the test fire results prove favorable, a release (representing the day s limit on acreage for which the district may issue burn permits) is issued. [1] Local fire officials work closely with growers and other smoke management personnel to protect schools, nursing homes, scheduled public events, etc., from detrimental smoke impacts. [4] Weather conditions are monitored and updated hourly to detect any changes which may cause smoke impact. On occasion, an in-person inspection is done of field location, wind direction, and field conditions in smoke sensitive areas. [3] Nephelometer monitors smoke impact in potential impact areas. [3]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	The following is obtained on a continual basis by the SMO and is used in the daily decision process to determine Willamette Valley field burning locations and amounts. Burning progress is altered or curtailed as conditions dictate. 1) Analysis of National Weather Service (NWS) observations of the upper level temperatures, moisture and stability as an initial determination of potential height of smoke rise and likely direction of smoke movement and dispersion. 2) Hourly analysis of plotted chart of surface weather observations to determine location and movement of pressure systems and surface pressure patterns influencing wind flows. 3) Forecast of hourly surface temperatures and relative humidities to forecast the time that any present upper air temperature inversions will be modified or dissipated. 4) Direct observations of wind speed and direction from the surface to 10,000 feet by pilot balloon. 5) Airborne weather observations used as a final determination of test fire decisions. 6) Aerial and ground observations of test fires to confirm adequate smoke rise, smoke transport wind direction and smoke dispersion characteristics (Not used in 2000, and probably will not be used again). [1][3] When weather conditions are appropriate to burn and the test fire results prove favorable, a release (representing the day s limit on acreage for which the district may issue burn permits) is issued. [1]
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	Tax credits are available to offset the costs of implementing alternative measures. [3] Research grants into alternative measures are available from the ODA. [3]

Smoke Management Program Component	Willamette Valley Oregon
15. Are the public notified of planned burning? If so, please describe how.	To find out if burning has been authorized for a particular area or a given day citizens may call the Field Burning Office in Salem. In some cases the local fire district may be able to provide this information. [1]
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	Not applicable.
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	DEQ has monitored visibility in several Class I areas and worked with an advisory committee representing agricultural, timber, and environmental interests and the public in developing a plan to meet the Federal visibility goal. Monitoring indicated that significant man-made visibility impairment is attributed to prescribed forest and field burning. Control strategies to remedy impairment were adopted. [1]
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	Direct observations by inspectors, permit agents and others provides information of possible rule infractions. ODA staff evaluate the factors involved in each case and the Director of Agriculture may assess civil penalties. [1]
Public Education	
19. Are there any public educational programs in place? If so, please describe.	A smoke management public information fact sheet is available at **http://www.oda.state.or.us/Natural_Resources/fb_pub.htm**.
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	Regular meeting with the Smoke Management Committee are held to review the programs effectiveness. [3]
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person	None.

Smoke Management Program Component	Willamette Valley Oregon
from whom the missing documents may be obtained.	
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Suzi Pettey, Registration and Permitting Coordinator, Oregon Department of Agriculture, Natural Resources Division, Smoke Management Program, (503) 986-4794.

Source of summary information:

[1] Smoke Management Guidelines for Vegetative Debris Burning Operations in the State of South Carolina. South Carolina Forestry Commission. Revised November 1998.

[2] Memorandum of Understanding between the South Carolina Department of Health and Environmental Control Bureau of Air Quality and the South Carolina Forestry Commission. July, 1985.

[3] Air Pollution Control Regulation 61 - 62.2 (Health & Environmental Control Department) at **www.state.sc.us/forest/lawdh2.htm**

[4] South Carolina Forest Law Handbook, Regulation of Fires on Certain Lands, Title 48, Chapter 35 at **www.state.sc.us/forest/lawprec.htm#contents**

[5] South Carolina Forest Law Handbook, South Carolina Prescribed Fire Act, Title 48, Chapter 34 at **www.state.sc.us/forest/lawpres.htm#20**

[6] Comments received from the South Carolina Forestry Commission. August 1999.

[7] South Carolina Forestry Commission, Fire and Burning Information website, **http://www.state.sc.us/forest/fire.htm**.

[8] Larry Barr, South Carolina Forestry Commission; personal communication with Stephanie Walsh, EC/R Incorporated, October 23, 2000, and comments dated January 22, 2001.

[9] South Carolina Forestry Commission, Annual Reports, 1996 through 2000, **http://www.state.sc.us/forest/ar.htm**.

Special Note:

This survey was reviewed by the South Carolina Forestry Commission. For more information, contact Larry Barr, SCFC, P.O. Box 21707, Columbia, SC, 29221.

Smoke Management Program Component	State
	South Carolina
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	Yes. As directed by the legislature, the Department of Health and Environmental Control (DHEC) promulgated open burning regulations [3] A MOU exists between the South Carolina Forestry Commission (SCFC) and the DHEC in which the SCFC assumes responsibilities pertaining to smoke management, the DHEC assumes authority of Air Pollution Regulation 62.2, and that both parties agree coordinate with one another. [1][2]
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	Yes. There are mandatory smoke management guidelines (Guidelines) for forest, wildlife, and agricultural area burning. The SCFC is responsible for administering the Guidelines and has the authority to make burn/no burn decisions. [1]
3. Please describe the SMP. What are the requirements and general practices (voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	The Guidelines are for forest, wildlife, and agricultural area burning. [1] Open burning is permitted only if the following minimum conditions are followed: (1) the amount of dirt on the material being burned must be minimized, (2) no heavy oils, asphaltic materials, items containing natural or synthetic rubber, or any other materials other than plant growth may be burned, and (3) all salvageable timber and pulpwood must be removed prior to burning for land clearing. [3] To be eligible for limited liability, prescribed fires must have at least one certified prescribed Fire Manager (Fire Manager) present and supervising the burn from ignition until it is declared safe. This requirement is necessary only under the SC Prescribed Fire Act, Section 48-34-60. It is not necessary to be a certified prescribed fire manager to burn. The benefit of being certified is the limited awarded under 48-34. [5][8] A written prescribed fire plan, prepared by a knowledgeable person, is needed for each forest, wildlife, and agricultural area to be burned (except for crop stubble and grass fields). The written plan should include the following: (1) location and sketch map or photo, (2) purpose and objective, (3) description of stand, fuels, and topography, (4) optimum weather and fuel conditions, (5) smoke management information, (6) preparation required, (7) public contacts needed, (8) firing technique, (8) patrol, mop up, and escaped fire procedures, (9) special precautions, and (10) evaluation information. The fire plan should be on site during the burn. [1] The Fire Manager must be in compliance with Title 48, Chapter 35 of the 1976 Code of Laws as amended (Notification-Precautions Law), and all other applicable regulations. [1] *Continued on next page*

Smoke Management Program Component	State
	South Carolina
3. Continued	There are five categories of general burning limitations, depending on the afternoon ventilation rate: (1) no burning allowed, (2) daytime burning only between 9:00 a.m. and 4:00 p.m., (3-5) daytime and nighttime burning allowed with increasing amounts of maximum allowable fuel, depending on conditions. [1] Maximum fuel tonnage that may be burned per day must not exceed the permissible limit set for a given 16,000 acres (25 square miles). The permissible limit is dependant on the distance to the nearest downwind smoke sensitive area and the category day. The limit can be found from tables in the Guidelines. [1] The Fire Manager must calculate available fuel tonnage and/or acreage that may be burned under forecasted conditions prior to informing the SCFC of intent to burn. [1] Fire Managers should contact the SCFC when the smoke from the burn has dissipated. [1] Special action regarding open burning during an Air Pollution Episode may apply. [2] The Guidelines state that the prescribed Fire Manager must evaluate downwind conditions prior to and during burning operations. This includes smoke sensitive areas within a sixty degree arc downwind from the burn. The Guidelines are not specific on how this evaluation should be done. Burners are cautioned that smoke flows and settles in low areas during the night and early morning and may create hazardous road conditions, especially when combined with fog. [1] On the day of the burn the Fire Manager must call the Forestry Commission Dispatch Center (Dispatch Center) to notify them of the burn and to report the following information: (1) time of the burn (planned), (2) county and location (latitude and longitude if possible), (3) type of burn, (4) tonnage and/or acreage to be burned, (5) identity of and distance to nearest downwind smoke sensitive area, and (6) person in charge of burn and how he/she can be contacted. Fire Managers must also obtain the fire weather forecast/category day, which includes information on smoke management, from Dispatch Center (1-800-777-3473) or on the internet (www.state.sc.us/forest). [1] Crop stubble and grass fields can be burned with limitations, depending on the category day. On category 1 days, when burning is generally not allowed, the burning of limited acreage of crop stubble and grass fields may be allowed. During category 2-5 days between 9:00 am and sunset, the burning of limited acreage is also allowed. With these types of burns, the tonnage burned is not a factor, only the acreage. Tonnages will be low (less than two tons per acre). [1][8]
4. How is information on the SMP or other requirements disseminated to burners?	During periods of relatively stagnant air, the National Weather Service, at the request of the DHEC, will issue an Air Stagnation Advisory (ASA) stating that an Air Pollution Episode exists and resulting in a category 1 day (no burning allowed). ASAs will be issued directly to the public by the Weather Service through television, commercial radio, NOAA weather radio, and newspaper reports. They will also be relayed by the Forestry Commission s communication network to all SCFC offices. Managers of fire in progress will be notified as soon as possible by Forestry Commission personnel. [1] The SCFC maintains an informational website. [7]

Smoke Management Program Component	State
	South Carolina
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	The SCFC provides training for individuals to become Certified Prescribed Fire Managers. [7]
6. How is the program funded?	There are no permit fees. All funding is part of the agency s operating budget. [6]
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	A MOU exists between the SCFC and the DHEC in which the SCFC assumes responsibilities pertaining to smoke management, the DHEC assumes authority of Air Pollution Regulation 62.2, and both parties agree coordinate with one another. [1][2] Agricultural burning is coordinated with wildlife and forestry burning by the SCFC. The smoke management guidelines published by the SCFC pertain to all three types of burning. [1][8]
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	The SCFC Dispatch Center receives notification of all agricultural burns. The purpose, location, person responsible, and smoke management information is recorded in a computer assisted dispatch and burn notification system. [8] The prescribed fire plan requires post-burn evaluation information that includes: (1) weather and temperature conditions, (2) percentage of fuel burned, (3) smoke dispersal, (4) objectives met, and (5) problems encountered. [1]
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	Common types of burned crops are corn, soybeans, and small grains, as well as coastal Bermuda grass and other grasses grown for grazing or hay production. [1] The main crops that are burned are wheat, barley, and rye. [8] No information was available on the number of acres burned for each crop. According to the SCFC annual reports [9]: Period — Agricultural Burning Acreage 1999-2000 — 150,856 1998-1999 — 153,163 1997-1998 — 127,687 1996-1997 — 205,696
10. What time of year is burning conducted for each major fuel type or	Most burning of wheat, barley, and rye occurs during May and June. [8]

Smoke Management Program Component	State
	South Carolina
crop?	
11. What actions are required to minimize emissions from fire?	The written prescribed fire plan must include smoke management information. [1] Open burning is permitted only if the following minimum conditions are followed: (1) The amount of dirt on the material being burned must be minimized, (2) No heavy oils, asphaltic materials, items containing natural or synthetic rubber, or any other materials other than plant growth may be burned, and (3) All salvageable timber and pulpwood must be removed prior to burning for land clearing. [3]
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	The Guidelines state that it is important that the Fire Manager who is preparing the plan and conducting the burn consider the location of all potential smoke-sensitive areas in order to eliminate any adverse effects from the smoke. In addition to evaluating smoke-sensitive areas within a sixty degree arc downwind from the burn, the Fire Manager must consider possible wind direction shifts and down-drainage smoke drift in all directions. Smoke-sensitive areas are defined as any area downwind or down-drainage where smoke may be dangerous or offensive (i.e. roads, towns, chicken farms, etc). [1] The Guidelines present tables which describe the maximum amount of fuel that may be burn at any one time in relation to the distance to the nearest downwind smoke-sensitive area and the category day. [1] *Continued on next page*
12. Continued	Burners are cautioned that smoke flows and settles in low areas during the night and early morning and may create hazardous road conditions, especially when combined with fog. [1] Burning of crop stubble/grass fields must be at least 1000' from any downwind smoke sensitive area. [1] Special action regarding open burning during an Air Pollution Episode may apply. [2]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	The Guidelines describe general burning limitations based on the category day and ventilation rate; some categories allow nighttime burning while others do not. [1] The Guidelines state that it is important that the Fire Manager who is preparing the plan and conducting the burn consider the location of all potential smoke-sensitive areas in order to eliminate any adverse effects from the smoke. In addition to evaluating smoke-sensitive areas within a sixty degree arc downwind from the burn, the Fire Manager must consider possible wind direction shifts and down-drainage smoke drift in all directions. [1] Burners are cautioned that smoke flows and settles in low areas during the night and early morning and may create hazardous road conditions, especially when combined with fog. [1] The SCFC receives a fire weather forecast, including smoke management information, every day by 7:00 a.m.

Smoke Management Program Component	State
	South Carolina
	(updated daily by 3:00 p.m.). The forecast includes transport wind direction and speed, mixing height, ventilation rate, category day, surface inversion time, nighttime dispersion, and the next day s dispersion outlook. Fire Managers must obtain the fire weather forecast, which includes information on smoke management, by calling a Forestry Commission Dispatch Center (1-800-777-3473) or on the internet (www.state.sc.us/forest). [1][8] Occasionally, during periods of relatively stagnant air, the National Weather Service, at the request of the SC Dept. of Health and Environmental Control, will issue an Air Stagnation Advisory (ASA). An ASA is a report or warning stating that an Air Pollution Episode exists. When an Air Pollution Episode exists, the smoke category day will be 1 (no burning allowed). [1]
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	No-till planting behind small grain harvest is encouraged by agricultural agencies. There are no incentives to consider alternatives. [8]
15. Are the public notified of planned burning? If so, please describe how.	The prescribed fire plan requires the public contact needed. [1] No other information is available.
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	The SMP is not voluntary.
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	If there is an air stagnation advisory or alert, no burning is allowed. [8]
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	Daily compliance with the smoke management Guidelines is handled by the SCFC Dispatch center. The SCFC performs complaint investigations of vegetative debris burning. Noted air quality regulatory violations are referred to the DHEC. [1] A written report or warning to a person of a violation at one site is considered adequate notice of the Regulation, and subsequent observed violations at the same or different site will result in appropriate legal action. [3] Any person violating the provision of Title 48, Chapter 35 is guilty of a misdemeanor and will be fined not less

Smoke Management Program Component	State
	South Carolina
	than $10 nor more than $100 or imprisoned for not less than ten days nor more than thirty days. For any subsequent offense, a fine of not less than $25 nor more than $300 or imprisonment for not more than six months may be imposed. [4] No property owner or lessee or his agent or employee conducting a prescribed fire pursuant to Title 48, Chapter 34 is liable for damage, injury, or loss caused by fire, resulting smoke, or other consequences of the prescribed fire unless negligence is proven. [5]
Public Education	
19. Are there any public educational programs in place? If so, please describe.	Yes, there are classes, media/publicity, and landowner and public meetings. [6] The SCFC maintains an informational website. [7]
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	There are no formal provisions to review program effectiveness. However, the SCFC and DHEC periodically review the program to consider if national air quality standards are being met and if the amount of burning allowed during different meteorological conditions should be changed. [8]
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	None.
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	W. Larry Barr, Senior Staff Forester, SC Forestry Commission, (803) 896-8856, **lbarr@forestry.state.sc.us**. J. Miles Knight, Fire Management Chief, SC Forestry Commission, (803) 896-8844, **mknight@forestry.state.sc.us**.

Source of summary information:

[1] South Dakota Department of Environment and Natural Resources, Air Quality Guideline for Open Burning, http://www.state.sd.us/denr/DES/AirQuality/openburn.htm.

[2] South Dakota Department of Environment and Natural Resources, ARSD 74:36:06:07, Open Burning Practices Prohibited, http://www.state.sd.us/denr/DES/AirQuality/Regulations/s743606.htm.

[3] Comments received from the South Dakota Department of Environment and Natural Resources dated July 5, 2000.

[4] WESTAR, Western States Agricultural Burning Survey, 1999.

[5] Tim Rogers, SD Department of Environment and Natural Resources; personal communication with Stephanie Walsh, EC/R Incorporated, October 23, 2000, and comments dated November 27, 2000.

Special Note:

This survey was reviewed by the South Dakota Department of Environment and Natural Resources. For more information, contact Tim Rogers, SD DENR, Joe Foss Bldg., 523 East Capitol Avenue, Pierre, South Dakota, 57501.

Smoke Management Program Component	State
	South Dakota
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	Agricultural burning is not regulated under the South Dakota air quality rules. [1] The South Dakota Department of Environment and Natural Resources (DENR) has the regulatory authority for the state s open burning rules. At the present time, DENR does not have the statutory authority to ban agricultural open burning in the state. The statutory authority to ban open burning is provided to counties or local governments. DENR has banned the open burning of tires, asphalt shingles, and treated wood by rule. [1][3]
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	South Dakota does not have a smoke management program for agricultural burning.
3. Please describe the SMP. What are the requirements and general practices	The state does not have a SMP, but the following rules and guidelines are in place that are associated with agricultural open burning. [5]

Smoke Management Program Component	State
	South Dakota
(voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	The regulations do not identify what is permissible to open burn. Open burning is typically conducted for the following practices: fire training; land clearing; right-of-way maintenance operations; agricultural crop burning; prescribed fires to manage ecosystems; elimination of fire hazards; untreated lumber scraps and trees; and recreational or ceremonial campfires. [1] The regulations do prohibit the open burning of materials that generate hazardous air pollutants that have the potential to cause serious health problems. These materials include oils, railroad ties, coated electrical wire, rubber, tires, tarpaper, asphalt shingles, and wood products treated with inorganic arsenicals, pentachlorophenol, or cresols. [1][2] Due to potential restrictions to burning in an area, burners should contact their local government (city or county), National Park Service, State Park Service, National Forest Service, or State Forest Service for approval if planning to initiate a burn. [1] The South Dakota Department of Agriculture, Division of Resource Conservation and Forestry, requires a permit to open burn in the Black Hills Protection District. The Pennington County Air Quality Board requires a permit to burn in the Rapid City area. [3]
4. How is information on the SMP or other requirements disseminated to burners?	Not applicable.
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	No. [5]
6. How is the program funded?	Not applicable.
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	South Dakota does not have regional coordination at the present time, although there may be regional coordination as we develop our smoke management plan. [3] The Open Burning Guidelines recommend contacting the National Park Service, State Park Service, National Forest Service, or State Forest Service if planning a burn in these areas in order to determine if other restrictions apply and to receive prior approval. [1]
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	The State does not collect this information. [5]

Smoke Management Program Component	State
	South Dakota
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	Agricultural burning occurs on a small percentage of the small grain stubble fields and on grassland. For the year reported, approximately 3,900,000 acres of spring and fall small grains were planted and approximately 25,000,000 acres of grassland. It is difficult to estimate the number of acres burned annually since records are not kept by any state or federal agencies in South Dakota. [4][5]
10. What time of year is burning conducted for each major fuel type or crop?	Most small grain stubble is burned in the spring (March and April), and most grassland burning occurs in the spring (March, April, and May), with some fall burning (September and October). [4]
11. What actions are required to minimize emissions from fire?	Open burning guidance recommends that the amount of dirt in the material being burned should be minimized; and oils, rubber, tarpaper, or any other materials creating unreasonable amounts of smoke or air pollutants may not be burned. [1]
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	The following guidelines apply to the open burning of trees, brush, grass, wood, and any vegetation in the clearing of land, right-of-way maintenance operations, and agricultural crop burning: 1) The prevailing winds during the burn should be away from any city or any occupied residence likely to be affected by the smoke to the best extent possible; 2) The amount of dirt in the material being burned should be minimized to reduce smoldering; 3) Materials creating unreasonable amounts of smoke or air pollutants may not be burned; 4) No hazardous waste or material shall be burned; 5) Open burning should be conducted between three hours after sunrise and three hours before sunset; 6) Open burning should not obscure visibility or create traffic hazard on any public road or airport right of way; 7) Notification of the burn; and 8) Common sense precautions, such as having someone watch over the fire until it is extinguished and assuring smoke does not impact residences or impair vehicular travel on highways, should be followed. [1]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	Guidelines recommend: Open burning should be conducted between three hours after sunrise and three hours before sunset for purposes of good smoke dispersion. [1][3] Guidelines recommend: Open burning should not obscure visibility or create traffic hazard on any public road or airport right of way. [1][3]

Smoke Management Program Component	State
	South Dakota
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	There are no steps or requirements developed to consider alternatives to fire as a land management tool. For suggestions on alternatives or information on open burning, burners can contact the Waste Management Program at (605) 773-3153. [1][3]
15. Are the public notified of planned burning? If so, please describe how.	Open Burning Guideline: The following entities should be notified of when and where the open burn will occur: local fire department, municipality nearest the burn, the county sheriff s department and any military, commercial, county, municipal or private airport or landing strip that may be affected by the burn. [1][3]
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	There is no SMP.
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	No, although the Open Burning Guidelines recommend contacting the National Park Service, State Park Service, National Forest Service, or State Forest Service if planning a burn in these areas in order to determine if other restrictions apply and to receive prior approval. The state recently joined WRAP and is in the process of addressing regional haze issues. [1][5]
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	The penalty for violating any Air Quality rule, including the open burning rule, is a $10,000 per day fine. Usually the violator first receives a warning letter; if noncompliance continues, enforcement is then pursued. [5]
Public Education	
19. Are there any public educational programs in place? If so, please describe.	Not at this time. [3]
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	No, although some burning may be regulated under the solid waste program which is evaluated; for example, if storm debris is taken to a land fill for disposal. [5]
Further Information	
21. Referring to the document list at	None

Smoke Management Program Component	State
	South Dakota
the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Tim Rogers, SD Department of Environment and Natural Resources, (605) 773-3151, **tim.rogers@state.sd.us**.

Source of summary information:

[1] Title 30 Texas Administrative Code (TAC). Chapter 111 Control of Air Emissions from Visible Emissions and Particulate Matter, Subchapter B Outdoor Burning. Texas Natural Resource Conservation Commission. 1996, http://info.sos.state.tx.us/pub/plsql/readtac$ext.ViewTAC?tac_view=4&ti=30&pt=1&ch=111.

[2] Comments received from the Texas Natural Resource Conservation Commission dated August 25, 1999.

[3] Comments received from the Texas Natural Resource Conservation Commission dated December 5, 2000.

Special Note:

This survey was reviewed by the Texas Natural Resource Conservation Commission. For more information, contact Phil Harwell, TNRCC, P.O. Box 13087, 12100 Park 35 Circle, Austin, TX, 78711-3087.

Smoke Management Program Component	State
	Texas
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	The Texas Natural Resources Conservation Commission (TNRCC) is in charge of overseeing all outdoor burning, including crop residue burning for agricultural management purposes when no practical alternative exists. [1]
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	The Outdoor Burning Rule is the State s smoke management program and compliance with the requirements is mandatory to have an authorized burn. [2]
3. Please describe the SMP. What are the requirements and general practices (voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	Outdoor burning is authorized for crop residue burning for agricultural management purposes when no practical alternative exists and if it is conducted under appropriate weather conditions and at appropriate times, and if it does not cause a nuisance or traffic hazard. [1] Structures containing sensitive receptors must not be negatively affected by the burn. [1] When possible, notification of intent to burn should be made to the appropriate commission regional office prior to the proposed burn. Commission notification or approval is not required except for costal salt-marsh

Smoke Management Program Component	State
	Texas
	management burning. [1] Prior to prescribed burning for forest management purposes, the Texas Forest Service shall be notified. [1]
4. How is information on the SMP or other requirements disseminated to burners?	The TNRCC has no formal program, although the agency publishes a Guidance Document to assist the general public, the regulated community, and responsible state and local officials. (*Outdoor Burning in Texas / Quemar al Aire Libre en Texas,* 11/2000, RG-049; Guidance in English and Spanish for interpreting the revised Outdoor Burning Rule, which became effective September 16, 1996.) [3]
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	Other state agencies may provide training in agricultural burning.[3]
6. How is the program funded?	General Appropriations. [2]
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	No.
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	The State does not collect this information except for sugar cane burning. [3]
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	This information is not available. [3]
10. What time of year is burning conducted for each major fuel type or crop?	Sugar cane and corn stubble is burned in the fall, coastal grasses burned in early and late spring. [3]

Smoke Management Program Component	State
	Texas
11. What actions are required to minimize emissions from fire?	Anyone performing outdoor burning must not burn electrical insulation, treated lumber, plastics, non-wood/demolition materials, heavy oils, asphaltic materials, potentially explosive materials, chemical wastes, and items containing natural or synthetic rubber. [1]
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	If at any time the burning causes or may tend to cause smoke to blow onto or across a road or highway, it is the responsibility of the person initiating the burn to post flag-persons on affected roads. [1] If residual smoke or fire after an agricultural burn has the potential to create a nuisance or traffic hazard condition the fire must be extinguished. [1][2]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	The regulations specify that burning must be commenced and conducted only when wind direction and other meteorological conditions are such that smoke and other pollutants will not cause adverse effects to any public road or highway, landing strip, navigable water, or off-site structure containing sensitive receptor(s). [1] It is required that burning must be conducted in compliance with the following meteorological and timing considerations: (1) Burning must commence no earlier than one hour after sunrise and be completed on the same day not later than one hour before sunset; (2) Burning must not be commenced when surface wind speed is predicted to be less than six miles per hour or greater than 23 miles per hour during the burn period; and (3) Burning must not be conducted during periods of actual or predicted persistent low-level atmospheric temperature inversions. [1]
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	The regulations only allow crop residue burning for agricultural management purposes when no practical alternative exists. [1]
15. Are the public notified of planned burning? If so, please describe how.	The regulations require the notification and approval of adjacent land occupants if the burn will be within 300 feet of the property line unless the burn is conducted downwind from the sensitive receptor. [1][2]
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	Does not apply. [3]
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so,	The Outdoor Burning Rule is included in the State Implementation Plan for Visibility Protection in Class I Areas. [3]

Smoke Management Program Component	State
	Texas
please describe?	
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	The regulations do not discuss what penalties are authorized for non-compliance, but do state that any person conducting outdoor burning under the regulations is not exempt from responsibility for consequences of outdoor burning. [1] The TNRCC has the statutory authority to levee administrative or civil penalties for any violation of the regulation. Administrative penalties can range as high as $10,000 per occurrence per violation and civil penalties can go as high as $25,000. [2] There is a nuisance rule that applies to agricultural burning. (30 TAC 101.4, Nuisance). [3]
Public Education	
19. Are there any public educational programs in place? If so, please describe.	Other state agencies may provide training in agricultural burning. [3]
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	There are no such provisions at this time. [3]
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	None.
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email	Phil Harwell, Texas Natural Resource Conservation Commission, (512) 239-1517, **pharwell@tnrcc.state.tx.us**.

Smoke Management Program Component	State
	Texas
if available).	

Source of summary information:

[1] UT Administrative Code, Title R307, Environmental Quality, Air Quality, Section 307-202-1, Definitions and Exclusions, **http://www.rules.state.ut.us/publicat/code/r307/r307.htm**.

[2] UT Statutory Code, Title 19, Environmental Quality Code, Chapter 2, Air Conservation Act, **http://www.le.state.ut.us/~code/TITLE19/TITLE19.htm**.

[3] UT Statutory Code, Title 11, Cities, Counties, and Local Taxing Units, Chapter 7, Fire Protection, **http://www.le.state.ut.us/~code/TITLE11/TITLE11.htm**.

[4] UT Statutory Code, Title 53, Public Safety Code, Chapter 7, Utah Fire Prevention and Safety Act, **http://www.le.state.ut.us/~code/TITLE53/TITLE53.htm**.

[5] Utah Smoke Management Plan, Revised March 23, 2000, **www.utahsmp.net**.

[6] WESTAR, Western States Agricultural Burning Survey, 1999.

[7] Utah Agricultural Statistics - 1999, **http://www.nass.usda.gov/ut/ut_abpages.htm**.

[8] Francis Bernards, UT Department of Environment Quality; personal communication with Stephanie Walsh, EC/R Incorporated, October 26, 2000.

Special Note:

This survey was reviewed by the Utah Department of Environment Quality. For more information, contact Francis Bernards, UT DEQ, Division of Air Quality, 150 North 1950 West, Salt Lake City, UT, 84114-4820.

Smoke Management Program Component	**State**
	Utah
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	Agricultural burning is allowed by the State, but may be regulated at the local level. [1][2][3][4]
2. Do you have a smoke management	There is no SMP for agricultural burning. There is an SMP for prescribed fire and wildland fire. [5]

Smoke Management Program Component	State
	Utah
program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	
3. Please describe the SMP. What are the requirements and general practices (voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	Not applicable.
4. How is information on the SMP or other requirements disseminated to burners?	Not applicable.
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	Not at this time. [8]
6. How is the program funded?	Not applicable.
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	There is no coordination at the State level. The SMP only applies to prescribed fire and wildland fire. [5]
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	This information is not collected by the state.
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard	The State does not compile data on the actual number of acres burned. For its emissions inventory, the State assumes agricultural burning occurs for waste products from the farming of wheat, barley, corn, oats, hay, and potatoes. The state estimates that one third of the harvested acres are burned, evenly distributed during the nine

Smoke Management Program Component	State
	Utah
prunings, ditchbanks, CRP land, etc.)?	acceptable burning months of January through May and September through December. [6]

	Annual Acres Harvested (000s) [7]			1/3 Annual Acres Harvested (000s) (Estimate of Annual Acres Burned)		
	1996	1997	1998	1996	1997	1998
Winter wheat	160	165	150	53	55	50
Other spring wheat	25	24	23	8.3	8.0	7.6
Barley	100	95	85	33	32	28
Corn	60	61	61	20	20	20
Oats	9	10	9	3	3.3	3
Hay	705	715	710	235	238	237
Potatoes	4.2	3.3	2.6	1.4	1.1	0.9

10. What time of year is burning conducted for each major fuel type or crop?	The state assumes that burning is evenly distributed during the nine acceptable burning months of January through May and September through December. [6]
11. What actions are required to minimize emissions from fire?	None.
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	None.
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	Not applicable.
14. Is there a process to consider the	

Smoke Management Program Component	State
	Utah
use of alternatives to fire? Are there incentives or disincentives?	No.
15. Are the public notified of planned burning? If so, please describe how.	There are no public notification requirements at the state level.
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	Not applicable.
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	Not applicable.
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	Not applicable.
Public Education	
19. Are there any public educational programs in place? If so, please describe.	Not at this time. [8]
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	Not applicable.
Further Information	
21. Referring to the document list at the	

Smoke Management Program Component	State
	Utah
beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	None.
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Frances Bernards, Department of Environmental Quality, Division of Air Quality, (801) 536-4056, **fbernard@deq.state.ut.us**.

Source of summary information:

[1] Chapter 173-430 Washington Administrative Code, Agricultural Burning, **http://www.ecy.wa.gov/biblio/wac173430.html**.

[2] EPA Review of Agricultural Burning Permit Program in Washington, Region 10 Investigation and Engineering Unit, August 8, 2000.

[3] Chapter 40, Laws of 2000, Field Burning Alternatives - - Tax Exemptions, Effective date March 22, 2000, **http://www.cdlaw.com/2000/CHAP_040.htm.**

[4] Washington Department of Ecology, Air Quality Program web site: **http://www.ecy.wa.gov/programs/air/airhome.html.**

[5] Washington Department of Ecology, Best Management Practices Guidance for Cereal Grain Crops and Non-Cereal Crops, **http://www.ecy.wa.gov/programs/air/airhome.html.**

[6] Cereal Grain Stubble Burning Memorandum of Understanding and Agreement (MOU) between the Washington State Association of Wheat Growers, the Washington State Department of Agriculture, and the Washington State Department of Ecology, February 1999.

[7] WESTAR, Western States Agricultural Burning Survey, 1999.

[8] Grant Pfeifer, WA Department of Ecology, Division of Air Quality; conversation with Stephanie Walsh, EC/R Incorporated, October 25, 2000.

[9] Melissa McEachron, WA Department of Ecology, comments received February 13, 2001.

[10] The Washington Clean Air Act statute: Revised Code of Washington, sections 70.94.650, 654, 656, and 745.

Special Note:

This survey was reviewed by the WA Department of Ecology. For more information, contact Melissa McEachron, Ecology, Lacey, WA.

Smoke Management Program Component	State
	Washington
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	Chapter 173-430 WAC regulates agricultural burning in Washington. The Department of Ecology (Ecology) is the regulatory agency for the agricultural burning rules. [1]
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	The rule applies to burning related to agricultural activities and includes burning of fields, prunings, weeds, and irrigation ditches, drainage ditches, fence rows, or other essential pathways. [1] Ecology may delegate implementation responsibility to interested and qualified counties, conservation districts and fire protection agencies.[1] Responsibility has been delegated in some counties to air pollution authorities, County Commissioners, the local conservation district, and extension offices. [2] After being issued a valid agricultural burning permit, the burner must call the Agricultural Burn Hotline maintained by Ecology to find out if it is permissible to burn that day based on air quality. [4]
3. Please describe the SMP. What are the requirements and general practices (voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	The rule applies to burning related to agricultural activities and includes burning of fields, prunings, weeds, and irrigation ditches, drainage ditches, fence rows, or other essential pathways. [1] Incidental agricultural burning is allowed to occur without a permit or a fee. Incidental agricultural burning is described as: (a) the burning is incidental to commercial agricultural activities; (b) the operator notifies thelocal fire department within the area where the burning is to be conducted; (c) the burning does not occur during an air pollution episode or any stage of impaired air quality declared; and (d) only the following items are burned: (i) orchard prunings; (ii) organic debris along fence lines or irrigation or drainage ditches; or (iii) organic debris blown by wind. [9] The rule establishes controls for agricultural burning in the state in order to minimize adverse health and environmental effects from agricultural burning. The control strategies include: (1) Establishing a permit program with minimum statewide requirements; (2) Providing for implementation of a research program to explore and identify economical and practical alternatives to agricultural burning; (3) Encouraging and developing economically feasible alternative methods to agricultural burning; (4) Limiting the scope of the rule to agricultural burning and distinguishing between agricultural burning and other types of burning; and (5) Providing for local administration of the permitting program through delegation. [1] Agricultural burning is allowed when it is reasonably necessary. A burner can show that it is reasonably necessary when it meets the criteria of the best management practices and no practical alternative is reasonably

Smoke Management Program Component	State
	Washington
	available. [1] *Continued on next page*
3. Continued	Burning for grass seed production is not permissible. In rare cases, a grower may burn under a waiver if his or her ground is too steep for other options. The grower must: complete a waiver application, on-site visit, obtain a permit, call the Agricultural Burn Hotline to find out if it is a permissible burn day, and fill out a post-burn report card.[7] All agricultural burning requires a permit. The permit application must describe the reason for burning and include at least the following information: Name and address of the person or corporation responsible for the burn, the specific location (county; legal description: Range, section, township, block and unit number), the crop type, the type or size of the burn, directions to the burn, specific reason for the burn, the target date for burning, and any additional information required by the permitting authority. [1] The permitting authority must evaluate the application and approve the permit prior to burning. [1] Permits must include the following conditions: (a) No burning at night except as a best management practice; (b) Complying with all fire safety regulations of the local fire protection agency including any no-burn directives they may issue; (c) Calling the local air authority burning information line (if there is one) before lighting the fire; (d) Burning when wind takes the smoke away from roads, homes, population centers, or other public areas, to the greatest extent possible; (e) No burning when adverse meteorological conditions; (f) Burning only natural vegetation; (g) No burning or adding fuel during any stage of an air pollution episode or local air quality burning ban; (h) Attending the fire at all times. [1] After being issued a valid agricultural burning permit, the burner must call the Agricultural Burn Hotline maintained by Ecology to find out if it is permissible to burn that day based on air quality. [4] After burning, the burner must fill out a post-burn report card. [7]
4. How is information on the SMP or other requirements disseminated to burners?	In the February 2000 MOU, the Washington Department of Agriculture (Agriculture), with assistance from the Washington State Association of Wheat Growers (WAWG), agreed to take primary responsibility for promoting the MOU and disseminating information to the cereal grain growers and through other agricultural organizations to increase the understanding and acceptance of new, agronomically sound, agricultural practices designed to reduce emissions. The parties shall use cooperative extension agents, conservation districts and field days to provide grower training and technical assistance on new management practices to reduce emissions. Ecology agreed to take the primary role in the drafting and production on educational materials and will coordinate education and technical assistance programs for the growers. WAWG will assist in the development of materials and programs. They will actively promote the emission reduction strategy and disseminate information to the agricultural industry. [6] Information on agricultural burning permits and alternatives to burning is available at the Ecology web site. [4]

Smoke Management Program Component	State
	Washington
	[5] *Continued on next page*
4. Continued	Ecology is required to work in conjunction with the Washington State University agricultural extension and the local conservation districts to develop public education materials for the agricultural community which identify the health and environmental effects of agricultural burning and provide technical assistance in finding alternatives to agricultural burning. [1][2]
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	Not at this time, although it is being considered for the future. [8]
6. How is the program funded?	All agricultural burning permits require a fee, which is the greater of: (1) a minimum fee of twenty-five dollars per year per farm based on burning up to 10 acres or equivalent; (2) a variable fee based on the acreage or equivalent of agricultural burning. The fee must be paid prior to receiving a permit. Revenues generated from agricultural burning-permit fees support the agricultural burning research fund; the local permitting authorities administrative and enforcement costs; and statewide administrative, education, and oversight costs. [1]
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	Information is not available on whether agricultural burning is coordinated with other states/tribes/jurisdictions. The agricultural burning regulations are implemented by the Department of Ecology, whereas the wildland and prescribed burning regulations are implemented by the Department of Natural Resources. Information is not available on whether there is any coordination between the two burning programs.
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	After burning, the burner must fill out a post-burn report card. [7] No other information is available.
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditch banks, CRP land, etc.)?	In 1998, the total number of acres recorded from permit applications submitted to Ecology through the delegated permitting authorities, air pollution control authorities, and growers, was 229,020. [2] Burn permits issued (acres): [7] 1997 1996 Wheat 157,648 123,079

Smoke Management Program Component	State
	Washington
	Grass Seed 22,225 38,537 Barley 5,773 648 CRP 22,069 4,302 Alfalfa 4,311 4,428 Oats 238 1,333 Other 23,030 3,610
10. What time of year is burning conducted for each major fuel type or crop?	Burn permits issued for cereal grain acreage (acres): [7] Spring Fall 1998 70,361 158,530 1997 58,217 110,696
11. What actions are required to minimize emissions from fire?	For purposes of protecting public health (not eliminating agricultural burning), if an area exceeds or threatens to exceed unhealthy air pollution levels, the permitting authority may limit the number of acres. [1] All agricultural burning permits must be conditioned to minimize emissions insofar as practical, including denial of permission to burn during periods of adverse meteorological conditions. [1] The agricultural burning task force is required to identify best management practices (BMPs) for agricultural burning that are economically feasible and socially acceptable. Practical alternative production methods and controls which would reduce or eliminated agricultural burning must be used when reasonably available. [1][5] To reduce emissions, growers burning large piles of non-cereal crops are required to make very hot fires, start and/or feed fires only during daylight hours, and allow fires to ash out during the evening and over night. [5] Ecology has certified practical alternatives to open burning of field or turf grasses grown for seed. Prior to 1998, Ecology limited the number of acres allowed to be burned. Without regard to any previous burn permit history, each farmer was limited to burning two thirds the number of acres the farmer burned under a valid permit in 1995, or two thirds the of acres in grass seed production on May 1, 1996. [1][9] In their February 2000 MOU, Ecology, Agriculture, and the WAWG agreed to reduce emissions from cereal grain stubble burning. On average, a minimum of 7% reduction in emissions per year will be achieved reaching a minimum 21% reduction in three years and 50% reduction over seven years. [6]
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	For purposes of protecting public health (not eliminating agricultural burning), if an area exceeds or threatens to exceed unhealthy air pollution levels, the permitting authority may limit the number of acres. [1]

Smoke Management Program Component	State
	Washington
	All agricultural burning permits must be conditioned to minimize emissions insofar as practical, including denial of permission to burn during periods of adverse meteorological conditions. [1] To reduce the impact of emissions from burning non-cereal crops: evening and nighttime burning of piles may be allowed if the typical offshore winds will promote better dispersion than would occur during daytime, onshore conditions; burning is only allowed on designated burn days and then only between the hours specified; burns must be extinguished before sunset; burns may not be ignited less than 2 hours before sunset; and growers of alfalfa are only allowed to burn during the winter under wind conditions which quickly disperse the smoke (reducing the concentration of smoke in the fall when burning of other crops occurs). [5]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	Permit decisions including the issuance, denial, or conditioning must be based on consideration of air quality conditions in the area affected by the proposed burning, the time of year, meteorological conditions, the size and duration of the proposed burning activity, the type and amount of vegetative material to be burned, the applicant s need to carry out such burning, existence of extreme burning conditions, risk of escape onto property owned by another, and the public s interest in the environment. [1] Permits must include the condition of no burning during adverse meteorological conditions. [1] Permits must include the condition that burning must not be done at night except as a best management practice. After being issued a valid agricultural burning permit, the burner must call the Agricultural Burn Hotline maintained by Ecology to find out if it is permissible to burn that day based on air quality. [4]
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	The Washington Clean Air Act established an agricultural burning practices and research task force, which is composed of representatives from Ecology, eastern Washington local air authorities, the agricultural community, universities, public health, and the conservation districts. The task force is required to identify Best Management Practices (BMPs) for agricultural burning that are economically feasible and socially acceptable. Practical alternative production methods and controls which would reduce or eliminate agricultural burning must be used when reasonably available. [1][2] Growers are required to read and understand the BMPs prior to making the decision whether they burn a field or try some alternate method of dealing with pest and/or residue requiring management. In many cases, growers are required to sign a permit application that states they have read and understand the BMPs specific to the type of burning they indicated on the form and believe the proposed burning is reasonably necessary and no practical alternative exists. [2] *Continued on next page*
14. Continued	In addition to the BMPs, growers are asked to review and implement additional specific burning practices to reduce emissions or the impact of emissions. [5]

Smoke Management Program Component	State
	Washington
	Agricultural burning is allowed when it is reasonably necessary. A farmer can show that burning is reasonably necessary when it meets the criteria of the BMPs and no practical alternative is reasonably available. [2] An incentive for reducing agricultural burning is the Field Burning Alternatives Tax Exemption. This law, effective March 22, 2000, provides tax exemptions and credits to encourage alternatives to the field burning of cereal grains and field and turf grass grown for seed. [3]
15. Are the public notified of planned burning? If so, please describe how.	Not at this time, although it is being considered for the future. [8]
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	The agricultural burning rules are not voluntary.
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	Not specifically. The program was created to support the State s Clean Air Act which includes protecting aesthetic values as one of its goals. [8]
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	The permitting authority or its delegate is responsible for responding to agricultural burning complaints. [1] Ecology uses a penalty matrix to determine the gravity of the violation and the economic benefit of the noncompliance in issuing a penalty. Penalties normally range between $1,000 and $10,000. If the violator demonstrates that payment of the penalty will create an economic hardship, Ecology can mitigate the penalty. [2] *Continued on next page*
18. Continued	Monitoring of the agricultural burn program is done by an Ecology staff agricultural burn team member flying over eastern Washington; other team members may observe burned fields incidentally when conducting other field work and conduct investigations as well. When a field that appears to have been burned intentionally is observed,

Smoke Management Program Component	State
	Washington
	Ecology determines if it was burned without a permit or if any of the conditions of the permit were violated. If there was a violation, the property owner is sent a certified letter notifying him or her that the violation occurred. The owner has ten days from the receipt of the letter to respond by telling Ecology if he or she is responsible, if a lease holder is responsible, or if it was an accidental fire. [2] Since January 2000, Ecology has sent out pre-Notice of Violation letters to suspected violators to collect information before an enforcement action is taken. [2] In their MOU, Agriculture and WAWG agree to work with Ecology to help develop effective compliance measures and to actively request assistance from their constituencies to help ensure all conditions of the MOU are met. [6]
Public Education	
19. Are there any public educational programs in place? If so, please describe.	Ecology is required to work in conjunction with Washington State University agricultural extension and the local conservation districts to develop public education materials for the agricultural community which identify the health and environmental effects of agricultural burning and provide technical assistance in finding alternatives to agricultural burning. [1][2] Information on agricultural burning permits and alternatives to burning is available at the Ecology web site. [4] [5]
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	Ecology audits the delegated permitting authorities. The audits normally consist of a review of permit applications on file and a discussion of the strengths and weaknesses of the program with the delegated authority. Ecology will normally make recommendations about how programs should be improved. [2] *Continued on next page*
20. Continued	The MOU to reduce stubble burning between Ecology, Agriculture, and the WAWG includes emission reduction goals. On average, a minimum of 7% reduction in emissions per year will be achieved reaching a minimum 21% reduction in three years and 50% reduction over seven years. The MOU includes an agreement to track progress towards MOU goals through three layers of accountability: (1) acres permitted are equal to acres burned, (2) BMPs are followed, and (3) BMPs are effective at reducing emissions. Ecology will establish procedures and protocols for data collection and analysis to ensure that accurate, timely information is available to the agricultural community and the public. WAWG, in conjunction with cooperative extension and delegated permitting authorities, will develop an emissions reduction allocation system subject to the approval of Ecology after it

Smoke Management Program Component	State
	Washington
	consults with Agriculture. The three parties agree to jointly conduct an annual review of actual emission reduction achieved and barriers to success, if any, and modify the workplan associated with the MOU as appropriate to ensure success. Results of the review will be reported to the agricultural burning task force. [6]
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	None.
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Grant Pfeifer, WA Department of Ecology and Agricultural Burning Task Force, (509) 456-3284. Melissa McEachron, WA Department of Ecology, (360) 407-6860.

Source of summary information:

[1] Chapter 173-430 Washington Administrative Code, Agricultural Burning, **http://www.ecy.wa.gov/biblio/wac173430.html**.

[2] Benton Clean Air Authority Regulation 1, Article 6, Agricultural Burning, **http://www.bcaa.net/A06.htm**.

[3] Benton Clean Air Authority Regulation 1, Article 10, Fees and Charges, **http://www.bcaa.net/A10.htm**.

[4] Benton Clean Air Authority, Agriculture web site, **http://www.bcaa.net/AG000.htm**.

[5] Terry Flores, Benton Clean Air Authority; personal communication with Stephanie Walsh, EC/R Incorporated, on October 30, 2000.

[6] Data from Karen Wood, Team Lead for Agricultural and Open Burning, WA Department of Ecology, November 3, 2000.

[7] Rob Rodger, Benton Clean Air Authority Inspector; comments dated March 27, 2001.

Special Note:

The Benton Clean Air Authority regulations for agricultural burning are in accord with the agricultural burning and best management practices requirements mandated by the State of Washington.

This survey was reviewed by the Benton Clean Air Authority. For more information, please contact Terry Flores, BCAA, 650 George Washington Way, Richland, WA, 99352.

Smoke Management Program Component	Benton Clean Air Authority Washington
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	Chapter 173-430 WAC regulates agricultural burning in Washington. The Department of Ecology (Ecology) is the regulatory agency for the agricultural burning rules. Ecology may delegate implementation responsibility to interested and qualified counties, conservation districts and fire protection agencies.[1] Ecology has delegated implementation responsibility to the Benton Clean Air Authority (BCAA) for Benton County. [5]
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What	The BCAA has an agricultural burning program that mirrors state law. [5] The BCAA has the authority to make the burn/no-burn decision. [5]

Smoke Management Program Component	Benton Clean Air Authority Washington
agency/office has the central authority to make burn/no burn decisions?	
3. Please describe the SMP. What are the requirements and general practices (voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	The BCAA regulations are consistent with best management practices requirements and the responsibilities of the BCAA under WAC 173-430 (Agricultural Burning). [3] An agricultural burning permit is required for all kinds of non-exempted agricultural burning. [4][7] A person with an agricultural burning permit must follow these requirements and restrictions: (1) unless otherwise specified, burning is allowed only between the hours of 9:00 a.m. and one hour before sunset; and (2) it is the responsibility of the burner to be informed of any additional fire safety rules as determined by their local fire district or county. [2] According to State law, burning that is incidental to commercial agricultural activities is allowed without applying for a permit or without payment of a fee if: (1) the burner notifies the local fire department; (2) the burning does not occur during a no burn day or any stage of impaired air quality; and (3) only the following items are burned - orchard prunings, organic debris along fence lines or irrigation or drainage ditches, or organic debris blown by the wind. [2] Burning of the above for non-agricultural purposes, such as clearing an orchard in order to use the property for housing developing, requires a Special Burn Permit. [4] Orchard prunings can be burned at any time regardless of the agricultural burn day. [4]
4. How is information on the SMP or other requirements disseminated to burners?	Burning requirements are given in the agricultural burning permit. [2] The BCAA maintains a website and burn-message phone line. [4]
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	No. The BCAA will refer people to the cooperative extension service. [5]
6. How is the program funded?	The program is funded through agricultural burning permit fees. [3]
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	No. [5]

Smoke Management Program Component	Benton Clean Air Authority Washington
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	The permit information is collected and reported annually to the State Department of Ecology. [5][6]
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	The most of the burning that occurs is orchard removal, where old trees are removed and burned so new trees can be planted. There are no wheat fields or grass seed farms in the county. [5] Acres Burned: [6] Season / Cereal Burning / Other Agricultural Burning / Total Agricultural Burning Spring 2000: 0 / 171 / 171 Fall 1999: 913.3 / 526 / 1,439.3 Spring 1999: 0 Fall 1998: 1,026 Spring 1998: 0 Fall 1997: 3,004 Spring 1997: 0
10. What time of year is burning conducted for each major fuel type or crop?	Year round. [7]
11. What actions are required to minimize emissions from fire?	The actions are listed on the burn permit; they are similar to the State requirements. [5]
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	Unless otherwise specified, burning is allowed only between the hours of 9:00 a.m. and one hour before sunset. [2]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn	The BCAA makes the daily burn/no-burn decision based on current monitoring and meteorological data. [2][4] Wind speed considerations are not taken into account when determining an agricultural burn day; therefore, it is the responsibility of the agricultural operation to determine if it is safe to burn or not. [4]

Smoke Management Program Component	Benton Clean Air Authority Washington
decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	Under State law, burners are required to consider best management practices. [1]
15. Are the public notified of planned burning? If so, please describe how.	Burners are required to notify to local fire district. Good neighbor practices are encouraged. [5]
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	The requirements are not voluntary.
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	The BCAA agricultural burning program mirrors state law; it indirectly addresses visibility concerns. [2]
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	The BCAA is responsible for enforcing the agricultural burning regulations. When there is a violation, prior to issuing a notice of penalty, the BCAA fills out a penalty matrix consisting of six questions. The answers to the questions are related to the severity of the violation and assigned a numerical value between zero and three. These values are added up and the penalty amount is determined from the total of this value. The maximum penalty allowed by the State is $10,000 per day per violation, but BCAA has never gotten close to fines of that amount. [5][7]
Public Education	
19. Are there any public educational programs in place? If so, please	There is no public relations campaign, per se. However, BCAA staff answer questions when people call in, participate in workshops, and act as guest speakers. [5]

Smoke Management Program Component	Benton Clean Air Authority Washington
describe.	
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	The permit information is collected and reported annually to the State Department of Ecology, which in turn reviews the program. [5]
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	None.
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Terry Flores, Benton Clean Air Authority, (509) 943-3396, **tflo@bcaa.net**. Rob Rodger, Inspector, Benton Clean Air Authority, (509) 943-3396, **rrod@bcaa.net**

Source of summary information:

[1] Chapter 173-430 Washington Administrative Code, Agricultural Burning, **http://www.ecy.wa.gov/biblio/wac173430.html**.

[2] Roland Schirman, Washington State University Cooperative Extension Services; personal communication with Stephanie Walsh, October 26, 2000, and comments dated November 27, 2000.

[3] Data from Karen Wood, Team Lead for Agricultural and Open Burning, WA Department of Ecology, November 3, 2000.

[4] EPA Review of Agricultural Burning Permit Program in Washington, Region 10 Investigation and Engineering Unit, August 8, 2000.

[5] Columbia Co Agricultural Burning Policies and Procedures Manual, June 19, 1995

Special Note:

The Columbia County regulations for agricultural burning are in accord with the agricultural burning and best management practices requirements mandated by the State of Washington.

This survey was reviewed by the Washington State University Cooperative Extension Services. For more information, contact Roland Schirman, WSU Cooperative Extension, 24106 N. Bunn Road, Prosser, WA, 99350.

Smoke Management Program Component	Columbia County Washington
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	Chapter 173-430 WAC regulates agricultural burning in Washington. The Department of Ecology (Ecology) is the regulatory agency for the agricultural burning rules. Ecology may delegate implementation responsibility to interested and qualified counties, conservation districts and fire protection agencies. [1] Columbia County has the delegated authority to regulate agricultural burning. [2] The applicable County code is Columbia County Ordinance 95-02, Agricultural Burning in Columbia County. [5]

Smoke Management Program Component	Columbia County Washington
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	Columbia County is the permitting authority for agricultural burning in the unincorporated areas of Columbia County with authority delegated by Ecology. [5] Roland Schirman, County agent for Columbia County/Washington State University Cooperative Extension Service (Coop Ext) has the authority to evaluate and publicize smoke ventilation projections daily during the agricultural burn seasons. Hours that conditions are favorable are set as the permitted burning hours. [2]
3. Please describe the SMP. What are the requirements and general practices (voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	Based on the Penn State/NCAR mesoscale model version 5 (MM5) run by the Department of Atmospheric Sciences at the University of Washington, hourly projections of ventilation conditions are made and rated as POOR, MARGINAL or GOOD. Individuals must follow ventilation guidance decisions by not burning under POOR conditions or limiting the size of burn on days designated as MARGINAL in order to minimize air pollution in accordance with RCW 70.94.650. These ventilation designations are posted on the DOE toll free line (1-800-406-5322) or can be obtained from the Columbia County Agricultural Burning Authority during normal business hours. [2] Agricultural burning is defined as the burning of vegetative debris from an agricultural operation necessary for disease or pest control, necessary for crop propagation and/or crop rotation, or where identified as a best management practice. [5] The agricultural burning policies and procedures manual applies only to field burning, not to the burning of orchard prunings, natural vegetation along fence lines, irrigation ditches, drainage ditches, and other essential pathways or natural vegetation blown by the wind. It does not apply to spot burning of ten acres or less for the year (cumulative). For all other kinds of agricultural burning, a permit is required if burning more than 10 acres annually. [5] The application for an agricultural burning permit must contain at least the following: (1) the reason for burning; (2) the name and address of the responsible party; (3) the specific location; (4) the crop type; (5) the type and size of the burn; (6) directions to the burn; (7) the target date for burning; (8) and any additional information on the application. [5] Permit decisions must be based on consideration of air quality conditions in the area affected by the proposed burning, the time of year, meteorological conditions, the size and duration of the proposed burning activity, the type and amount of vegetative material to be burned, the applicant s need to carry out such burning, existence of extreme burning conditions, risk of escape onto property owned by another, and the public s interest in the environment. [5] If the permitting authority determines a specific situation will cause a nuisance under chapter 173-400 WAC, agricultural burning will not be allowed. [5]

Smoke Management Program Component	Columbia County Washington
	Continued on next page
3. Continued	To be eligible for an agricultural burning permit, an applicant must fall into one of the following categories: (1) the burning practice identified should be established as a best management practice for the specific crop or circumstance; (2) the burning practice identified must be a part of a farm plan that considers all elements of long-term impacts of that burning upon the soil and the total farm environment, and that burning is reasonably necessary to successfully carry out the enterprise in which the applicant is engaged, as prescribed by an accepted/acceptable farm expert; (3) the burning practice identified must be practiced by the majority of other growers or agricultural-related agencies in similar situations; and (4) the burning allowed under this parachute provision which provides a reasonable amount of time for the applicant to convert to nonburning practices to allow the state sufficient time to review the procedure for include as a BMP. [5] Permits must include the following conditions: (1) no burning at night except as a best management practice; (2) complying with all fire safety regulations of the local fire protection agency including any no-burn directives they may issue; (3) burning when wind takes the smoke away from roads, homes, population centers, or other public areas, to the greatest extent possible; (4) no burning during adverse meteorological conditions; (5) burning only the types of vegetation authorized; (6) no burning or continuation of burning during any stage of an air pollution episode or burning ban; and (7) attending the fire at all times. [5] The permittee agrees to (1) construct a fire break and allow 25 feet clearance from a combustible wall or structure; (2) report each separate burn to the Columbia County Communications Center prior to the light up, advising of the expected time and location of the burn; (3) control the burn with sufficient personnel and equipment present at all times to control the fire and then totally extinguish the fire prior to sunset or when the authorized burning is completed; (4) burn only natural vegetation; (5) delay burning to another date if wind conditions would cause smoke to be a hazard to roadways or dwellings; and (6) comply with the best management practices guidelines. [5]
4. How is information on the SMP or other requirements disseminated to burners?	A bullet summary of SMP and other requirements is part of the application form. Applicants must sign statement that they have read and understand these points. In addition, before each the burn season, there is a public meeting to review the rules and the permitting process. [2]
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	There is no formal burner training available. [2]
6. How is the program funded?	A $35 annual administrative fee is charged each entity making a burn application. [2]

Smoke Management Program Component	Columbia County Washington
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	Washington Dept of Ecology has overall jurisdiction. [2]
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	The permit information is collected and reported semi-annually to the State Department of Ecology. [3]
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	Acres Burned: [3] Season / Cereal Burning / Other Agricultural Burning / Total Agricultural Burning Spring 2000 / 33,244 / 893 / 34,137 Fall 1999 / 12,376 / 1,871 / 14,247 Spring 1999 / 41,212 Fall 1998 / 19,444 Spring 1998 / 28,253 Fall 1997 / 17,871 Spring 1997 / 26,480
10. What time of year is burning conducted for each major fuel type or crop?	March - April = Spring Mid September - October = Fall; See Question #9.
11. What actions are required to minimize emissions from fire?	The Columbia County regulations are consistent with best management practices requirements and the responsibilities of the County under WAC 173-430 (Agricultural Burning). If the conditions for smoke ventilation are marginal, there is a per permittee acreage limit. [2]
Smoke Management	
12. What actions are required to prevent	The Columbia County regulations are consistent with best management practices requirements and the

Smoke Management Program Component	Columbia County Washington
or mitigate smoke impacts?	responsibilities of the County under WAC 173-430 (Agricultural Burning). If the conditions for burning are marginal, there will be a per permittee acreage limit. [2] Permits include the following conditions: (1) no burning at night except as a best management practice; (2) complying with all fire safety regulations of the local fire protection agency including any no-burn directives they may issue; (3) burning when wind takes the smoke away from roads, homes, population centers, or other public areas, to the greatest extent possible; (4) no burning during adverse meteorological conditions; (5) burning only the types of vegetation authorized; (6) no burning or continuation of burning during any stage of an air pollution episode or burning ban; and (7) attending the fire at all times. [5] The permittee agrees to (1) construct a fire break and allow 25 feet clearance from a combustible wall or structure; (2) report each separate burn to the Columbia County Communications Center prior to the light up, advising of the expected time and location of the burn; (3) control the burn with sufficient personnel and equipment present at all times to control the fire and then totally extinguish the fire prior to sunset or when the authorized burning is completed; (4) burn only natural vegetation; (5) delay burning to another date if wind conditions would cause smoke to be a hazard to roadways or dwellings; and (6) comply with the best management practices guidelines. [5] If the permitting authority determines a specific situation will cause a nuisance under chapter 173-400 WAC, agricultural burning is not be allowed. [5]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	Permit decisions must be based on several factors (see Question #3), including consideration of air quality conditions in the area affected by the proposed burning, the time of year, meteorological conditions, the size and duration of the proposed burning activity, the type and amount of vegetative material to be burned. [5] If the conditions for burning are marginal, there will be a per permittee acreage limit. [2] The Coop Ext uses U. of Washington meteorological prediction models. [2]
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	One question on burn application specifically asks what alternatives have been considered and why they are not applicable to this situation. [2]
15. Are the public notified of planned burning? If so, please describe how.	No general public announcement. Local emergency dispatcher must be notified prior to ignition. [2]

Smoke Management Program Component	Columbia County Washington
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	Approved Agricultural Burn permits are required for all field burning. [2]
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	Not directly [2]
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	The Columbia County Sheriff and his deputies, based on the recommendation of the Board of Review and the approval of the Columbia County Board of Commissioners, shall have the authority to issue citations for violations of this ordinance in the same manner and in the same form as provided by state statutes and court rules for criminal offenses (civil infractions). A finding of guilty for a first offense within a five year period may result in a civil penalty equal to the sum of an appropriate applicant fee plus a variable penalty of up to $75 plus court costs. A finding of guilty for a second offense within a five year period may result in a civil penalty equal to the sum of an appropriate application fee plus a variable penalty of up to $500 plus court costs. Each occasion a fire is ignited or used contrary to this Chapter shall constitute a separate violation. [5] Board of Review: One fire district commissioner and the District Fire Chief from Fire Districts 1 and 3 and one fire commissioner from Fire District 2 (Columbia County Resident) appointed by the Board of Columbia County Commissioners to investigate complaints and violations of policy and procedures. [5] Enforcement is handled by the WA Dept. of Ecology. [2] Ecology uses a penalty matrix to determine the gravity of the violation and the economic benefit of the noncompliance in issuing a penalty. Penalties normally range between $1,000 and $10,000. If the violator demonstrates that payment of the penalty will create an economic hardship, Ecology can mitigate the penalty. [4]
Public Education	
19. Are there any public educational programs in place? If so, please describe.	There is no formal public education program. However, before each burn season, there is a public meeting to review the rules and the permitting process. [2]
Program Evaluation	

Smoke Management Program Component	Columbia County Washington
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	No formalized review requirements but ongoing modifications by persons involved with program. [2]
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	None. [2]
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Roland Schirman, WSU Cooperative Extension, (509) 382-4741. Richard Jones, Columbia County Commissioner, (509) 382 4542. Jay Penner, Agricultural Burn Task Force, (509) 337 6381.

Source of summary information:

[1] Chapter 173-430 Washington Administrative Code, Agricultural Burning, **http://www.ecy.wa.gov/biblio/wac173430.html**.

[2] Northwest Air Pollution Authority website, **http://www.nwair.org/moutdoo.htm**.

[3] Northwest Air Pollution Authority Regulations, Section 504, Agricultural burning, **http://www.nwair.org/reg500a.htm**.

[4] Julie O Shaughnessy, Northwest Air Pollution Authority; personal communication with Stephanie Walsh, EC/R Incorporated, on November 1, 2000, and comments dated December 4, 2000.

Special Note:

The Northwest Air Pollution Authority regulations for agricultural burning are in accord with the agricultural burning and best management practices requirements mandated by the State of Washington.

This survey was reviewed by the Northwest Air Pollution Authority. For more information, contact Mike Evenson or Julie O Shaughnessy, NWAPA, 1600 South Second Street, Mount Vernon, WA, 98273-5202.

Smoke Management Program Component	Northwest Air Pollution Authority Washington
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	Chapter 173-430 WAC regulates agricultural burning in Washington. The Department of Ecology (Ecology) is the regulatory agency for the agricultural burning rules. Ecology may delegate implementation responsibility to interested and qualified counties, conservation districts and fire protection agencies. [1] Ecology has delegated implementation responsibility to the Northwest Air Pollution Authority (NWAPA) for Island, Skagit, and Whatcom counties. [2]
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	The NWAPA implements the State agricultural regulations which addresses smoke issues. [2] The burn/no-burn decision is made by the NWAPA. [4] Local fire protection agencies may also issue no-burn directives. [3]
3. Please describe the SMP. What are	Within NWAPA s jurisdiction, outdoor burning will be banned in eight cities and their urban growth areas after

Smoke Management Program Component	Northwest Air Pollution Authority Washington
the requirements and general practices (voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	December 31, 2000, and in nine cities and their urban growth areas after December 31, 2006. [2] The NWAPA regulations are consistent with best management practices requirements and the responsibilities of the NWAPA under WAC 173-430 (Agricultural Burning). [3] All agricultural burning requires an agricultural burning permit issued by the NWAPA and applicants must pay a fee. No agricultural burning is allowed in any of the following circumstances or locations: when the applicant is not a farmer with an agricultural operation or a government entity with specific agricultural burning needs; when the materials to be burned include anything other than natural vegetation; during a no burn day declared by NWAPA or during an air pollution episode; when burning causes a nuisance or the NWAPA determines that a nuisance is likely to result from burning; if the applicant is unable to show that burning, as requested, is reasonably necessary, constitutes a best management practice, and is necessary because no practical alternative is reasonably available. [3] The NWAPA establishes conditions for all permits and may: (1) restrict the permissible hours of burning; (2) restrict burning to a defined season; (3) restrict the size of fires; (4) impose requirements for good combustion practice; and (5) restrict burning to specified weather conditions. [3] In addition to the conditions of their agricultural burning permit, all burners must also comply with the following conditions: (1) all fires shall be extinguished whenever an air pollution episode or no burn day is declared; (2) the fire shall be attended by the person responsible for the fire and who is capable of extinguishing the fire; (3) the fire must be extinguished before it is left unattended; (4) burning shall occur during daylight hours only; (5) no burning is allowed at night except as a best management practice; (6) permission from a landowner must be obtained prior to starting the fire; (7) the responsible person shall notify the local fire district prior to igniting the fire and he/she must comply with all fire safety regulations of the local fire protection agency; (8) the NWAPA may impose limitations to reduce smoke or prevent air pollution and/or protect property and the health, safety, and comfort of persons from the effects of burning at any time; (9) burning only natural vegetation; (10) burning when wind takes smoke away from roads, homes, population centers, or other public areas; and (11) no burning during adverse meteorological conditions. [3] According to State law, burning that is incidental to commercial agricultural activities is allowed without applying for a permit or without payment of a fee if: (1) the burner notifies the local fire department; (2) the burning does not occur during a no burn day or any stage of impaired air quality; and (3) only the following items are burned - orchard prunings, organic debris along fence lines or irrigation or drainage ditches, or organic debris blown by the wind. [3]
4. How is information on the SMP or other requirements disseminated to burners?	Burning requirements are given in the agricultural burning permit. [3] The NWAPA maintains a website. [2]

Smoke Management Program Component	Northwest Air Pollution Authority Washington
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	No. [4]
6. How is the program funded?	The program is funded through permit application fees. [3]
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	Agricultural burning is coordinated within the NWAPA s jurisdiction with county Fire Marshals, local Fire Districts, and the Washington Department of Natural Resources. There is no coordination with other jurisdictions. [4]
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	Permit information is kept on record. An annual summary is sent to Ecology. [4]
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	Most of the agricultural burning is done by propane burner. Potato residual, bulb, and crop propagation are the most common types of agricultural burning. Approximately 475 total acres were burned in 2000: 90 acres of organic potatoes for vine separation; 175.5 acres of strawberry residue for disease control; 207 acres of bulb residue for disease control; 0.5 acres for weed abatement; and 0.1 acre for a ryegrass test burn. [4]
10. What time of year is burning conducted for each major fuel type or crop?	Agricultural burning primarily occurs in the Spring, although a little occurs in the Summer as well. [4]
11. What actions are required to minimize emissions from fire?	Within NWAPA s jurisdiction, outdoor burning will be banned in eight cities and their urban growth areas after December 31, 2000, and in nine cities and their urban growth areas after December 31, 2006. [2] The NWAPA establishes conditions for all permits and may restrict the size of fires and impose requirements for good combustion practice. [3] In addition to the conditions of their agricultural burning permit, all burners must also comply with certain restrictions, including the following conditions: the NWAPA may impose limitations to reduce smoke or prevent air pollution and/or protect property and the health, safety, and comfort of persons from the effects of burning at

Smoke Management Program Component	Northwest Air Pollution Authority Washington
	any time; burning only natural vegetation. [3]
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	The NWAPA establishes conditions for all permits and may: (1) restrict the permissible hours of burning; (2) restrict burning to a defined season; (3) restrict the size of fires; (4) impose requirements for good combustion practice; and (5) restrict burning to specified weather conditions. [3] In addition to the conditions of their agricultural burning permit, all burners must also comply with certain requirements, including the following conditions: all fires shall be extinguished whenever an air pollution episode or no burn day is declared; burning shall occur during daylight hours only; no burning is allowed at night except as a best management practice; the NWAPA may impose limitations to reduce smoke or prevent air pollution and/or protect property and the health, safety, and comfort of persons from the effects of burning at any time; burning when wind takes smoke away from roads, homes, population centers, or other public areas; and no burning during adverse meteorological conditions. [3]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	The NWAPA establishes conditions for all permits and may restrict the permissible hours of burning, restrict burning to a defined season, and restrict burning to specified weather conditions. [3] In addition to the conditions of their agricultural burning permit, all burners must also comply with certain restrictions, including the following: all fires shall be extinguished whenever an air pollution episode or no burn day is declared; burning shall occur during daylight hours only; no burning is allowed at night except as a best management practice; burning when wind takes smoke away from roads, homes, population centers, or other public areas; and no burning during adverse meteorological conditions. [3]
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	Consideration of best management practices (BMPs) is required under state regulations. State law requires farmers to explain why burning is necessary. All non-burning alternatives are considered during the permitting process. A farmer can show burning is reasonably necessary to successfully carry out the enterprise when it meets the criteria of the BMPs and no practical alternative is reasonably available. [1]
15. Are the public notified of planned burning? If so, please describe how.	There are no public notification requirements. The burner must notify the local Fire Marshal. [4]
16. If the SMP is voluntary, are there	

Smoke Management Program Component	Northwest Air Pollution Authority Washington
incentives for burner participation? Please describe the incentives.	The requirements are not voluntary.
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	No. [4]
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	Depending on the severity of the violation, the NWAPA may choose to educate the individual about the burning regulations, issue a fine, or suspend the burning permit. There are civil penalties for failure to comply with a permit. [4]
Public Education	
19. Are there any public educational programs in place? If so, please describe.	The NWAPA maintains a website, periodically contributes to the WA state extension service newsletter, and notifies potential burners (growers) about changes to the rule and/or relevant permitting issues through written correspondence. [2][4]
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	Typically the program is reviewed annually before the burn season begins. The staff looks at any regulatory changes and/or changes in the BMPs, and how people can comply with BMPs, and determine how that will affect the program. [4]
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	None
22. Please list two persons to contact	Mike Evenson, Agricultural Burning contact, Northwest Air Pollution Authority, (360) 428-1617.

Smoke Management Program Component	Northwest Air Pollution Authority
	Washington
for any follow-up questions (include name, agency, phone number, and email if available).	Julie O Shaughnessy, Northwest Air Pollution Authority, (360) 428-1617 ext. 210.

Source of summary information:

[1] Chapter 173-430 Washington Administrative Code, Agricultural Burning, **http://www.ecy.wa.gov/biblio/wac173430.html**.

[2] Randy Peltier, Southwest Clean Air Agency; personal communication with B. Bauer, EC/R Incorporated, on July 24, 2000.

[3] Southwest Clean Air Agency web site, http://www.swcleanair.org.

[4] Randy Peltier, Southwest Clean Air Agency; personal communication with Stephanie Walsh, EC/R Incorporated, on October 31, 2000, and comments dated December 8, 2000.

Special Note:

This survey was reviewed by the Southwest Clean Air Agency. For more information, contact Randy Peltier, Southwest Clean Air Agency, 1308 NE 134th Street, Vancouver, WA, 98685-2747.

Smoke Management Program Component	Southwest Clean Air Agency Washington
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	Chapter 173-430 WAC regulates agricultural burning in Washington. The agricultural burning rules are Department of Ecology (Ecology) rules providing for implementation by local air pollution authorities and qualified counties, conservation districts and fire protection agencies. [1] The Southwest Clean Air Agency (SWCAA) implements the State agricultural burning regulations, relying heavily on the Best Management Practices (BMPs). [2] However, there is no need for grass burning in SWCAA jurisdiction and their agricultural burning program relates primarily to orchard maintenance and takeout. [4]
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	The SWCAA implements the State agricultural burning regulations in southwest Washington relying heavily on the BMPs. [2] SWCAA has the authority to make the burn/no-burn decisions in their jurisdiction and to prohibit burning on poor air quality days. If large scale meteorological information is needed, Ecology is consulted. [4]
3. Please describe the SMP. What are the requirements and general practices (voluntary guidelines, permits, generic	The SWCAA regulations are consistent with best management practices requirements and the responsibilities of the SWCAA under WAC 173-430 (Agricultural Burning). [3] All agricultural burning is subject to a set of standard guidelines and conditions in addition to BMP. Permits, if

Smoke Management Program Component	Southwest Clean Air Agency Washington
permit-by-rule requirements, etc.)?	required, define any special conditions as needed. [4]
4. How is information on the SMP or other requirements disseminated to burners?	All burners receive information on state BMPs. Burning requirements are given in the agricultural burning permit. [2] The SWCAA maintains a website. [4]
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	No. [4]
6. How is the program funded?	The program is funded through permit fees. [4]
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	The SWCAA implements the State regulations and uses a modified version of the State permit. [4] Beyond application of the BMP guidance, little or no coordination occurs because burning is typically being done by small farms and is generally related to orchard prunings and/or takeout. [4]
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	The permit information is kept on record, but is not compiled annually. [4]
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	There is very little burning in SWCAA s jurisdiction. In the last year, it has issued permits for less than 50 acres of burning, none of which were for grass or grain field burning. Sometimes SWCAA issues agricultural burning permits for orchard take-outs (burning of old trees that have been removed). [4] There is no grass field burning that occurs in southwest Washington.
10. What time of year is burning conducted for each major fuel type or crop?	Agricultural burning permits are issued at different times during the year, depending on why they are needed. Because so little agricultural burning takes place here, there is no regular burning season. [4]
11. What actions are required to minimize emissions from fire?	The actions are listed on the burn permit; they are similar to the State requirements. [2]

Smoke Management Program Component	Southwest Clean Air Agency Washington
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	The actions are listed on the burn permit; they are similar to the State requirements. [2]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	If large scale meteorological information is needed for making a burn/no-burn decision, the decision is made by Ecology. [4] Burning is subject to suspension during periods of impaired air quality or air pollution episodes or if a smoke nuisance is being created. Burning is generally limited to daylight hours. [4] The burner is required to call into SWCAA before commencing a burn in order to confirm that the air quality is good enough to accommodate the burn. [4]
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	Under State law, burners are required to consider best management practices. [1] There exist no incentives or disincentives other than best management practices confirming that agricultural burning is indeed the most reasonable option. [4]
15. Are the public notified of planned burning? If so, please describe how.	There is no public notification requirement. [4]
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	The requirements are not voluntary. Permit applications are mandatory for all agricultural burning activity that is not clearly categorically exempt (i.e. orchard prunings). Categorically exempt burning must be conducted according to guidelines and conditions. Violations are subject to termination of burning and civil penalties. [4]
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	The SWCAA regulations are consistent with best management practices requirements and the responsibilities of the SWCAA under WAC 173-430 (Agricultural Burning); the regulations address visibility indirectly. [3] Good air quality must exist on the day of burning. [4]
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-	The SWCAA can issue civil penalties up to $10,000 per violation. [4]

Smoke Management Program Component	Southwest Clean Air Agency Washington
compliance?	
Public Education	
19. Are there any public educational programs in place? If so, please describe.	The SWCAA maintains a website, provides application materials, and one-on-one assistance to applicants. [3]
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	The program is very small and does not warrant a formal review. Staff keep up with state agricultural burning issues and keep their information up-to-date. [4]
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	None.
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Randy Peltier, Southwest Clean Air Agency, (360) 574-3058, **randy@swcleanair.org**. Jackie Brown, Southwest Clean Air Agency, (360) 574-3058, **jackie@swcleanair.org**.

Source of summary information:

[1] Chapter 173-430 Washington Administrative Code, Agricultural Burning, **http://www.ecy.wa.gov/biblio/wac173430.html**.

[2] Mary Hansen, Burn Control Officer, Walla Walla County, WA; personal communication with Stephanie Walsh, EC/R Incorporated, October 31, 2000, and comments received January 31, 2001.

[3] Data from Karen Wood, Team Lead for Agricultural and Open Burning, WA Department of Ecology, November 3, 2000.

Special Note:

The Walla Walla County regulations for agricultural burning are in accord with the agricultural burning and best management practices requirements mandated by the State of Washington.
This survey was reviewed by the Walla Walla Regional Planning Agency. For more information, contact Mary Hansen, Walla Walla Regional Planning, 310 West Poplar, Walla Walla, WA, 99362.

Smoke Management Program Component	Walla Walla County Washington
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	Chapter 173-430 WAC regulates agricultural burning in Washington. The Department of Ecology (Ecology) is the regulatory agency for the agricultural burning rules. Ecology may delegate implementation responsibility to interested and qualified counties, conservation districts and fire protection agencies. [1] The County Commissioners have implementation authority in Walla Walla County, and have hired a Burn Control Officer. [2]
2. Do you have a smoke management program (SMP) for agricultural burning? If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	Walla Walla County has a burn program that mirrors state requirements. [2] Burn/no-burn decisions are made by Ecology on a daily basis. [2]
3. Please describe the SMP. What are the requirements and general practices	The Walla Walla County regulations are consistent with best management practices requirements and the responsibilities of the County under WAC 173-430 (Agricultural Burning). [2]

Smoke Management Program Component	Walla Walla County Washington
(voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	Burners must call in each day to find out if it is a burn day and, if so, what the burn hours are. [2]
4. How is information on the SMP or other requirements disseminated to burners?	Burning requirements are given with the agricultural burning permit. [2] The Burn Control Officer attends many meetings to discuss the burning regulations. [2] There is a wheat board that checks if burners are filling out the reports correctly. [2]
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	Burn under MM5 for air quality. [2]
6. How is the program funded?	The program is funded through permit fees. [2]
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	No, but we would like OR to coordinate on our burn days. [2]
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	Permit information is kept by the Burn Control Officer. [2] The permit information is collected and reported annually to the State Department of Ecology. [3]
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	The two primarily crops that are burned are wheat stubble and alfalfa. Annual acreage burned is approximately 25,000 and 6,000 acres, respectively. [2] Acres Burned: [3] Season / Cereal Burning / Other Agricultural Burning / Total Agricultural Burning Fall 2000 / 15,736 / 679 / 16,415 Spring 2000 / 15,481 / 9,140 / 24,621 Fall 1999 / 17,131.5 / 9,745.3 / 26,876.8

Smoke Management Program Component	Walla Walla County Washington
	Spring 1999 15,790 Fall 1998 17,476 Spring 1998 6,458 Fall 1997 20,513 Spring 1997 197
10. What time of year is burning conducted for each major fuel type or crop?	Most of the burning is done in the Spring. They are trying to eliminate Fall burning. [2]
11. What actions are required to minimize emissions from fire?	The Walla Walla County regulations are consistent with best management practices requirements and the responsibilities of the County under WAC 173-430 (Agricultural Burning). [2]
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	The Walla Walla County regulations are consistent with best management practices requirements and the responsibilities of the County under WAC 173-430 (Agricultural Burning). [2]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	The daily burn/no-burn decision is made by Ecology. Ecology considers meteorological conditions. [2]
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	Under State law, burners are required to consider best management practices. [1]
15. Are the public notified of planned burning? If so, please describe how.	Burners are asked to notify their neighbors the smoke may affect them. [2]

Smoke Management Program Component	Walla Walla County Washington
16. If the SMP is voluntary, are there incentives for burner participation? Please describe the incentives.	The requirements are not voluntary.
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	Information not provided.
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	First time violations of the agricultural burning regulations can result in a written warning. A second violation can result in a $75 fine. Subsequent violations can be referred to Ecology for enforcement. [2]
Public Education	
19. Are there any public educational programs in place? If so, please describe.	The Burn Control Officer attends many meetings to discuss the burning regulations. [2]
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	There is a good deal of air quality testing and checking that occurs on a regular basis. [2]
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	None.

Smoke Management Program Component	Walla Walla County Washington
22. Please list two persons to contact for any follow-up questions (include name, agency, phone number, and email if available).	Mary Hansen, Burn Control Officer, Walla Walla County, WA, (509) 527-3226.

Source of summary information:

[1] Wyoming Air Quality Standards and Regulations, Chapter 10, Section 2, Open burning restrictions, **http://deq.state.wy.us/AQD/chap10.pdf**.

[2] Mark Arn, Wyoming Department of Environmental Quality, Air Quality Division; personal communication with B. Bauer, EC/R, October 27, 1998.

[3] Comments received from the Wyoming Department of Environmental Quality dated August 20, 1999.

[4] Comments received from the Wyoming Department of Environmental Quality dated July 24, 2000.

[5] Darla Potter, Visibility, Smoke Management, and EIS Coordinator, Department of Environmental Quality; personal communication with S. Walsh, EC/R Incorporated, on November 2, 2000 and comments dated December 18, 2000.

[6] WESTAR, Western States Agricultural Burning Survey, 1999.

Special Note:

Chapter 10, Section 2 was previously Wyoming Air Quality Standards and Regulations Section 13, Open burning restrictions. The entire set of Wyoming Air Quality Regulations were restructured from one chapter into thirteen chapters as of October 29, 1999. The Division did not make any changes or additions in the content of the existing regulations beyond basic introductions and cosmetic changes to newly organized chapters.

This survey was reviewed by the Wyoming Dept. of Environmental Quality. For more information, contact Darla Potter, Visibility, Smoke Management, and EIS Coordinator, WY DEQ, 122 West 25th Street, Herschler Building, 4 West Cheyenne, WY, 82002.

Smoke Management Program Component	State
	Wyoming
Operation	
1. Is agricultural burning regulated in your state/jurisdiction? If so, please identify the regulatory agency or other authority (air pollution control agency, fire department, forest service, conservation district, etc.)	The Wyoming Air Quality Division s (AQD) open burning restrictions (Chapter 10, Section 2) state that the open burning of plant life grown on the premises in the course of any agricultural or forestry operation may be permitted when it can be shown that such open burning is necessary and that no fire hazard or public nuisance will occur. [3] In practice, this has been applied to forestry and rangeland operations but not agricultural operations. [3] No other regulations are in place that apply to agricultural burning. [5]
2. Do you have a smoke management program (SMP) for agricultural burning?	Wyoming has not yet developed a Smoke Management Program. [1][2]

Smoke Management Program Component	State
	Wyoming
If so, who regulates the SMP? What agency/office has the central authority to make burn/no burn decisions?	
3. Please describe the SMP. What are the requirements and general practices (voluntary guidelines, permits, generic permit-by-rule requirements, etc.)?	Open burning of plant and forestry wastes is permitted when it can be shown that the open burning is necessary and that no fire hazard or public nuisance will occur. The regulations provide no further detail regarding how a burner would show that a nuisance will not occur. No written burn plan is required. [1] No criteria have been established to define a nuisance. [3]
4. How is information on the SMP or other requirements disseminated to burners?	There are no requirements outside of Chapter 10, Section 2 for burners. [4]
5. Is burner training available, e.g., certification, qualification, air quality, etc.?	There are no requirements for burner qualifications and no smoke management training is made available by the Wyoming Air Quality Division. [4]
6. How is the program funded?	Processing of burn permit requests is funded via a program budget. No fees are assessed to burners. [3]
7. Is agricultural burning coordinated with other states/tribes/jurisdictions? Is it coordinated with wildland and prescribed burning? If yes, please describe.	There is no regional coordination initiated by the Wyoming Air Quality Division on a routine basis. [4]
Emissions	
8. How is burning documented and tracked (crop type, location, individual burn, by county, emissions, etc.)?	Information is not tracked. [5]
9. If available, please list the annual number of acres burned for each major fuel type or crop (crop residue, orchard prunings, ditchbanks, CRP land, etc.)?	The crops that are burned are alfalfa seed, grass seed, and barley. Irrigation ditches are also burned. [6] Estimated acreage burned: [6] Crop — Acres Grass seed — 1,000

Smoke Management Program Component	State
	Wyoming
	Alfalfa seed 12,000 The above acreage estimates are not thorough. The data for that report were collected from agricultural extension offices and other local sources. There is no comprehensive collection of data on agricultural burning in the state. [5]
10. What time of year is burning conducted for each major fuel type or crop?	Grass seed is burned in April and October. Alfalfa seed is burned September through November and February through April. [6]
11. What actions are required to minimize emissions from fire?	No actions to minimize emissions are required by the regulation. [3][4]
Smoke Management	
12. What actions are required to prevent or mitigate smoke impacts?	No actions to minimize smoke impacts are required by the regulation, other than a general prohibition of burning if it will cause a public nuisance. [1]
13. How is meteorology, time of day, and air quality monitoring (particulate matter, visual observations, balloon launches, etc.) incorporated into burn decisions? Is any consideration given to airshed capacity in burn decisions (i.e., how much smoke can the area handle given current and planned burn activity)?	No monitoring required. [3] The regulations do not discuss if or how smoke dispersion conditions must be evaluated. [1]
14. Is there a process to consider the use of alternatives to fire? Are there incentives or disincentives?	There are no incentives or disincentives for the use of alternatives to burning. [4]
15. Are the public notified of planned burning? If so, please describe how.	The regulations do not discuss if the affected public must be notified when fires are authorized. [1] The fire department that has jurisdiction in the area must be notified. [3]
16. If the SMP is voluntary, are there	Wyoming has not yet developed a Smoke Management Program. [2]

Smoke Management Program Component	State
	Wyoming
incentives for burner participation? Please describe the incentives.	
17. Does your program address visibility (regional haze or the national visibility goal) concerns, and, if so, please describe?	No accounting for visibility impairments or regional haze are required by the regulation. [4]
Enforcement	
18. Are there penalties or other types of enforcement tools used for non-compliance?	The regulations do not discuss penalties for non-compliance. [1]
Public Education	
19. Are there any public educational programs in place? If so, please describe.	No. [3]
Program Evaluation	
20. Does the program include provisions to review its effectiveness? If so, what are the review criteria?	No. [3]
Further Information	
21. Referring to the document list at the beginning, please provide any missing documents and/or the agency/person from whom the missing documents may be obtained.	Not Applicable.
22. Please list two persons to contact	Darla Potter, Visibility, Smoke Management, and EIS Coordinator, Department of Environmental Quality, (307)

Smoke Management Program Component	State
	Wyoming
for any follow-up questions (include name, agency, phone number, and email if available).	777-7346, **dpotte@state.wy.us.**